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The Reagan Coalition

The United States is so diverse that an administration limited by rigid ideology could neither govern well nor long survive.

Ronald Reagan was the candidate of a coalition: fundamentalists, stalwarts, moderates, progressives. Though his administration has moved the direction of American government sharply to the right, the president continues to stand on a broadly consistent program.

Now the job is to keep that program sufficiently wide and inclusive to maintain social harmony and achieve enduring political success.

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Perspectives

Iurii Andropov and the End of the Postwar Period

Jerry F. Hough

There are, no doubt, many reasons that Iurii Andropov was elected general secretary of the Communist Party of the Soviet Union last month. The Soviet elite seems to have drawn the lessons from the Polish experience both that reform is absolutely indispensable and that it has politically difficult preconditions that may provoke unrest. Because of his connection with Hungary and reformer-intellectuals, Andropov was probably able to reassure the reformers that he will attempt to introduce change, and because of his long tenure as KGB chief, he was able to reassure the conservatives that he is ruthless enough to prevent reform from leading to a loss of control.

Yet the central fact about Iurii Andropov is that he is the first man to be chosen Soviet party leader whose primary expertise is in foreign policy.

In 1953, he was sent to the embassy in Hungary. Then, in May 1957, he became head of the socialist countries department of the Central Committee. He held this job for ten years.

From 1967 to 1982, he served as chairman of the KGB. That institution performs the functions not only of internal security, but also those of the American CIA in foreign intelligence. Especially since Andropov was the first head of the KGB (or predecessor institution) to have a foreign policy background, he must have been much concerned with its foreign responsibilities.

Thus Andropov comes to his new post after 30 straight years of

direct involvement in foreign policy making. Indeed, his exposure to international relations began even earlier, for from the age of 26 to 37, he was engaged in political work in the Karelo-Finnish Republic, where the top official was Otto Kuusinen, a leading figure of the Communist International.

Not only is Andropov primarily a foreign policy specialist, but all the evidence suggests that he has fresh ideas. His mentor both in the Karelo-Finnish Republic and in the Central Committee apparatus, Otto Kuusinen, was a very nonorthodox thinker on relations between the Soviet Union and foreign communists, and Andropov himself surrounded himself with innovative young men while heading the socialist countries department. Since the mid-1970s, Andropov has been the Politburo's most forceful public spokesman for détente and especially for taking initiatives to further it.

It is highly likely that Andropov was chosen general secretary because the party elite has the correct sense that domestic economic well-being is linked with foreign policy and that the complex task of improving relations with China, Europe, and the United States requires a skilled chess player. A number of policy changes are possible and even quite probable in the relatively near future. A partial reconciliation with China, accompanied by a reduction in the number of troops on the Far East border, seems almost certain. Unless the Soviet Union wants to provoke Europe into accepting the Pershing

missiles, it will demobilize the Far East troops rather than transfer them to the West, and hence will effect a reduction in military expenditures. A withdrawal from Afghanistan is even conceivable.

The United States should not, however, exclude the possibility that far more significant changes are in store. In broader perspective a basically irrational situation has developed on the border between Eastern Europe and Western Europe. The Soviet Union has a conventional arms structure which, Soviet scholars assert, is designed to permit it to handle a situation in which East Germany revolts, NATO intervenes to support the revolt, and then China takes advantage of the situation to enforce its definition of its borders with the Soviet Union. The West, for its part, has built a huge defensive force to guard against the possibility that the Soviet forces have an offensive function.

In reality, however, the worst case scenario that the Soviet force is said to be designed to forestall is improbable in the extreme, and the Soviet generals cannot be thinking seriously of using this army offensively in Western Europe. Even aside from the fact that an invasion of Europe would almost surely result in nuclear war, the Soviet Union has absolutely no incentive to destroy the West Germany that is providing it with high technology and to replace it with a united communist Germany that soon would be as troublesome as Poland or China.

Soviet generals, remembering

that the German disaster at Stalin-grad resulted first of all from the unreliability of the Hungarian and Rumanian troops on the German right flank, surely cannot conceive of initiating a major war in which Polish and other Eastern European troops would have to fight side by side with Soviet troops. These generals must shudder at the thought of key supply lines cutting a Poland whose population is hostile enough to want to fight a partisan national liberation war against the Soviet Union. Indeed, the Soviet Union was even afraid to build its pipeline to Western Europe across Poland, and decided to route it to the south instead.

Similarly, if the Soviet leaders are thinking clearly, they cannot expect that military superiority vis-à-vis Western Europe will lead to the latter's political subservience if Western Europe feels that the Soviet Union has no intention of using these military forces. American nuclear superiority did not affect the behavior of North Viet Nam or Iran, and Soviet superiority did not prevent the independence of Yugoslavia, Albania, and China. Indeed, even Rumania, which knows that there are circumstances in which the Soviet Union will invade it, has been able to take advantage of the Soviet reluctance to do so to show considerable independence in foreign policy. Western Europe will be no more susceptible to Soviet military superiority that Moscow has no interest in using than it has been to American military superiority.

The situation on the European continent serves some of the American political interests (namely in maintaining the alliance), and, at least until recently, it has not been too expensive in economic terms. By contrast, the situation is completely counter-productive to the Soviet Union. With an economy only some 65 percent of the American level and perhaps 25 percent of the level of the United States and Western Europe combined, it cannot afford to get into a race for military superiority. It cannot af-

ford to give the impression of seeking superiority. It cannot afford to be so secretive that it depends on the American Pentagon to tell the world about the level of its military forces, for the Pentagon is scarcely a sympathetic press agent.

The United States will be forced to face up to new choices.

If, as seems possible, the Soviet Union does begin to take the steps necessary to reduce the military face-off in Europe, the key decisions on the Western side will be made in Europe. Recent experience suggests that Europe is ready to respond to Soviet initiatives and move out of the postwar era.

For this reason, the question whether the United States should try to encourage or discourage such a development would probably not have a critical impact on the fundamental decisions. The United States will, however, be forced to think through assumptions about East-West relations that it has taken for granted for decades and to face up to new choices.

Even a basic change in the situation in Europe will leave many aspects of Soviet-American relations unaffected. The Soviet Union may become somewhat less active in the third world, but it is never going to play the role of a Luxembourg. The conceptions of the Soviet leaders about human rights and their domestic legitimization needs are very different from those of the Americans, and they deeply believe that military equality gives them as much right as the United States to try to influence events in the third world. If the United States is going to panic at every radical coup d'état, at every instance of Soviet verbal support for a rebel

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movement, or at every Soviet brigade in Cuba, then Soviet-American relations are going to continue to be very bad. The same is true if the United States reacts strongly to every arrest of a dissident in the Soviet Union.

Such a development would be a tragedy. There are many situations in which Soviet-American cooperation is needed, with the prevention of nuclear war being only the most obvious. Any peace in the Middle East will require Soviet participation in a treaty that guarantees the neutrality of any Palestinian unit. Even in areas such as Africa where Soviet-American competition is inevitable, small countries such as Somalia have often been less the proxies of the Soviet Union and the United States than the determinants of their policies, and this is a situation that needs to be ended.

The United States needs to show far more self-confidence in its competition with the Soviet Union. It has the superior political and economic system; it and its allies own the economic cards. Or at least it owns the economic cards if it does not divert so many resources to military spending that it destroys third world economies with its high interest rates and economic recession. It should welcome the chance to move out of the postwar period into an era in which it can concentrate on economic growth and let the natural superiority of its economic system determine the outcome of the competition.

"Fears of War . . ."

Readers interested in the subject of John Steinbruner's article "Fears of War, Programs for Peace" in the Fall 1982 (Vol. 1, No. 1) issue of *The Brookings Review* may wish to consult *Public Interest Report* (June 1982), issued by the Federation of American Scientists, which contains a detailed description of one plan for linking strategic arms reduction with a nuclear weapons freeze. 

The Reagan Coalition

Its different elements—diverse,
sometimes competing—reflect the president's
broadly consistent program.

A. James Reichley

THE REAGAN ADMINISTRATION during its first two years has moved the direction of American government sharply to the right. The administration has been much more conservative than the preceding Carter administration, and significantly more conservative than the earlier postwar Republican administrations of Presidents Eisenhower, Nixon, and Ford.

Yet Ronald Reagan, like all American presidents, was elected as the candidate of a coalition. Most of the elements within this coalition probably have more in common with each other than they have with prevailing forces within the Democratic opposition. But their political, economic, ideological, and geographic interests are diverse, sometimes competing. During Reagan's first two years in office, this diversity and competition have led to some disputes and divisions, both within the administration and between the administration and Republican or conservative factions in Congress ("gypsy moths," "boll weevils," "yellow jackets," and so forth). Republican losses in the House of Representatives in the 1982 elections will cause increased strains in some of these relationships.

Better understanding of the elements that compose the Reagan coalition, and of their common interests and differences, should help those trying to estimate the future course of the administration and the more extended future of the conservative movement.

The conventional wisdom in Washington is that the Reagan coalition is made up of Conservatives, neoconservatives, and the religious new right—the first predominantly Catholic, the second predominantly Jewish, and the third predominantly evangelical Protestant. This analysis seems to leave out much of the traditional Republican Party—which was surely a major factor in Reagan's election and has played an important role in his administration.

As usual, however, the conventional wisdom is not wholly wrong. The Conservative-neoconservative-new right combination strongly influenced the conduct of the 1980 campaign and so far has established the Reagan administration's general ideological tone. I call this part of the coalition the conservative fundamentalists.

The various fundamentalist groups have some differences among themselves, but all agree on the need for fairly radical change in the policies and directions maintained by American government most of the time from the New Deal to Reagan's election. The Conservatives (spelled with a capital "C" to signify their connection with New York's Conservative Party) descend from the anticommunist movement of the years after the Second World War. Their cause has received much of its direction and élan from the group of right-wing intellectuals and political activists centered on William Buckley's *National Review*.

Largely Catholic, the Conservatives view themselves as defenders of Christian tradition against the demonic challenge of international communism, embodied militarily by the growing might of the Soviet Union. Concentration on the threat of Soviet power has led the Conservatives to devote much of their energies to foreign policy. But they have also conducted a broad critique of the alleged moral degeneracy of American society and culture. Since 1973, their particular social issue has been the drive to reverse the Supreme Court decision establishing a right to abortion.

The neoconservatives are for the most part former liberals, even socialists, even Trotskyists, who during the 1960s became alarmed over what they viewed as the weakening of American resolve in the international contest with Soviet imperialism and the general collapse of social discipline that seemed to infect large sections of the middle class. Many, though by no means all, of the neoconservatives are Jews (Jeane Kirkpatrick and Michael Novak being among the notable exceptions). The extent to which concern for the survival of Israel led the neoconservatives to desert their former leftist connections and seek allies on the more security-minded right has been widely debated. Certainly it has been a factor; but regard for social order and continuity, derived from Jewish and other religious traditions, has also played a role. The neoconservatives have found major outlets in the pages of *Commentary* and *The Public Interest*.

The religious new right is composed of socially conservative groups, mainly from evangelical Protes-

tant backgrounds, who during the latter part of the 1970s rose up against such expressions of social "liberation" as militant feminism, gay rights activism, busing school children for racial integration, and prohibition of group prayer in the public schools. The religious new right had substantial impact on the 1978 and 1980 elections, particularly in parts of the South.

There were several reasons, in addition to growing anger over social change, that led traditionally apolitical evangelicals to enter politics with a bang in the late 1970s. One was the leadership offered by a number of charismatic television preachers, most visibly Jerry Falwell, pastor of the "Oldtime Gospel Hour" from Lynchburg, Virginia. Another was financial loss suffered by withdrawal of federal tax exemptions from segregated private schools. (Many Washington commentators were puzzled when the Reagan administration clumsily attempted to restore tax exemptions to some of the church-operated "seg-academies" last January. Why, it was asked, had the administration risked being labeled racist over so comparatively minor an issue? The answer was that the tax exemption question was *the* issue for some of the conservative church groups that supported Reagan in 1980, and the White House operatives charged with servicing this constituency were simply carrying out their political mission.)

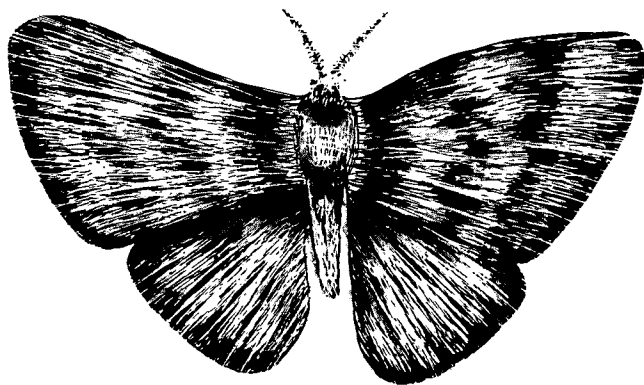
The evangelicals' interest in politics had also been sparked by the emergence of Jimmy Carter. A "born again" Christian, Carter worked hard at cultivating his co-religionists, and their support probably provided him with the margin of victory in 1976, not only in southern and border states, but also in northern industrial states with large blocs of rural voters, like Pennsylvania and Ohio. Many evangelicals felt that Carter, once elected, turned his back on them. But they had gained a sense of their political potential, which they were prepared to use on behalf of more faithful champions.

A Creation of Conservatives

Finally, the religious new right was in part the creation of a cadre of political and economic conservatives, notably Richard Viguerie, Paul Weyrich, and Howard Phillips, who after Reagan's defeat for the 1976 Republican nomination decided that the forces of social and religious conservatism offered untapped resources. In the late 1970s Viguerie, Weyrich, and Phillips introduced some of the conservative evangelists to the uses of direct mail and other modern publicity and fund-raising techniques. At this point, the new right was born.

The new right has behaved with considerably more political sophistication and less insularity than most of its predecessors founded on similar social bases (such as the Dixiecrat movement of the 1940s and George Wallace's American Independence Party of 1968). Ob-

serving that earlier conservative rural Protestant movements had tended to cut themselves off from natural ideological allies among other ethnic and religious groups, the religious new right (composed of associations like the Moral Majority, Christian Voice, and the Religious Roundtable) has taken care to avoid overt racism and has formed alliances with some Catholics (on the abortion issue) and Jews (through support for Israel)—though Zionist Jews often find it perplexing that evangelicals favor a Jewish state in Israel as a biblically promised sign of the coming of the last days.



Gypsy moth

A fourth group within the general alignment of political fundamentalists is the collection of publicists, politicians, and heterodox economists preaching the doctrine of supply-side economics. The supply-siders' organizing idea is that deep cuts in tax rates will promote economic prosperity. In this view they do not differ markedly from orthodox conservatives, who have always argued that relatively low taxes coupled with monetary restraint will lead to a healthy economy. Where some supply-siders depart from orthodoxy is in assigning a low priority to a balanced budget.

The Reagan administration in practice has followed a course of uneasy compromise between the supply-side approach and orthodox conservatism. The huge cut in federal income tax rates pushed through by the administration in 1981 came out of the supply-side recipe book. In 1982, however, the president, heeding warnings from the orthodox conservatives in Congress and on Wall Street, reluctantly accepted a substantial tax increase designed to bring down projected gargantuan federal deficits.

Supply-side economics, beside expressing an economic theory, grows out of a social attitude that may be called neopopulism: a distrust for elites, whether multinational bankers, establishment economists, or federal government bureaucrats, coupled with the conviction that economic growth and social dynamism depend on the initiative of millions of small entrepreneurs pursuing their visions of an earthly paradise. The disdain of supply-siders like Congressman Jack Kemp for "country-club" Republicans represents a belief that most social rules and established doctrines

have been manufactured by those already wealthy, or their intellectual lackeys, to preserve the social status quo. But the supply-siders remain conservative in their defense of market capitalism against manipulation by political elites for social purposes. The proposal by some of the supply-siders that the gold standard be restored as the basis for the monetary system attempts to wed populist goals to one of the most venerable of all conservative economic ideas (not currently very popular, however, with orthodox conservatives).

The Fundamentalist Alignment

All elements in the fundamentalist alignment, even the supply-siders, include many people drawn from outside the normal constituencies of the Republican Party. Catholic Conservatives often come from families that followed the usual tendency of urban Catholics to back local Democratic machines. Neoconservative Jews are in many cases converts from decidedly left-wing traditions. Southern evangelicals when they voted at all generally conformed to their region's ancient loyalty to the Democracy. Supply-siders represent heterodox populist economics that used to fit most comfortably with political liberalism. All of these elements, therefore, offer rich potential gains to a new conservative coalition. By switching from the old liberal alignment to the other side, they may provide the impetus for a new political era.

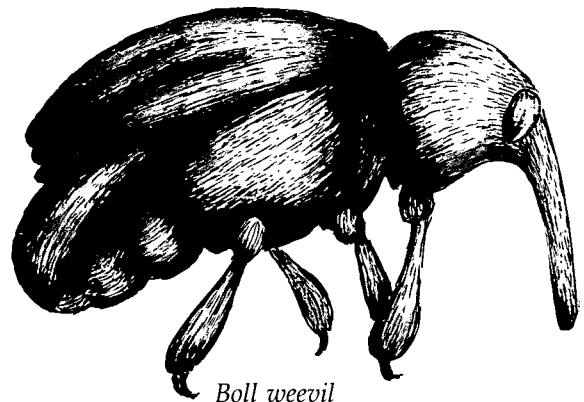
The fundamentalists, however, do not by themselves have the electoral strength to establish a durable national majority. The lesson of Barry Goldwater's overwhelming 1964 defeat was that fundamentalist conservatives alone cannot win a national election. Though the ranks of fundamentalists have grown since 1964, polling evidence indicates they remain less than 30 percent of the national electorate. To win elections, therefore, fundamentalists must both combine with more traditional elements of the historic Republican Party and attract independents.

The division of the Republican Party with which the fundamentalists ally most readily is the group I call the stalwarts—the old Taft wing of the party, based mainly in the Middle West, but also firmly established in rural areas and small towns in the East and Far West. The stalwarts stand for an instinctive kind of conservatism: more pragmatic and less theoretic than that of the fundamentalists, less open to beguilement by faddish notions like supply-side economics, less combative in world affairs. They include among their current leaders Senator Howard Baker, Republican leader of the Senate; Senator Robert Dole, chairman of the powerful Senate Finance Committee; Representative Robert Michel, Republican leader of the House; and Representative Barber Conable, ranking

Republican on the House Ways and Means Committee.

In 1981 the stalwarts loyally supported the administration's drive to reduce domestic spending, increase military expenditures, and achieve a record cut in federal taxes—though with private reservations, particularly over the tax cut. Facing economic recession and continued high interest rates in the summer of 1982, however, stalwarts in Congress, led by Dole, put together the tax package to reduce deficits. When cuts in federal aid began to cause pain in state capitals, many stalwarts dug in against further cuts in aid programs. While favoring a strong national defense, the stalwarts' roots in the isolationist outlook of Robert Taft make them leery of the kind of overseas adventures that attract some of the fundamentalists.

The other great historic wing of the Republican Party, which contested first with the stalwarts and later with the fundamentalists for party supremacy during much of the twentieth century, is composed of moderates and progressives. The moderates, who draw on the tradition of Thomas Dewey and Dwight Eisenhower, are prepared to accept social change, and try to make it work better, but are cautious about initiating change themselves. Governmental reorganization and rooting out corruption are their favorite kinds of political reform. In foreign policy they are staunch internationalists, in contrast to the latent isolationism of the stalwarts and the single-minded anticommunism of the fundamentalists.



Boll weevil

The progressives, who carry on the tradition of Abraham Lincoln and Theodore Roosevelt, believe in positive use of government to achieve desired social goals but, like the moderates, operate within a framework of essentially conservative values. "Progressive conservatism" is viewed by some commentators as almost a contradiction in terms. But governmental activism may readily be combined with conservative objectives. Progressive Republicans differ crucially from liberal Democrats in their support for a social and economic "partnership" between business and government, and in their inclination to administer social services through the states and localities.

Most of the moderates and progressives opposed Reagan's drive for the 1980 Republican presidential nomination. At the Detroit convention, nevertheless, Reagan selected George Bush, the candidate favored

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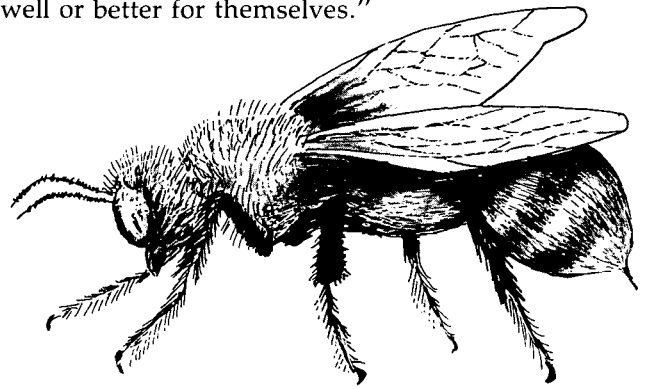
by most moderates, as his running mate for vice-president.

As president, Reagan has drawn heavily on the products of Ivy League schools and the Wall Street business-legal establishment, both of which have been closely tied to moderate and progressive Republicanism. No fewer than seven members of the Reagan cabinet (in the fall of 1982) hold Ivy League degrees. James Baker, Reagan's chief of staff, cheerfully predicted at the start of the administration that he expected a harmonious relationship with presidential counselor Edwin Meese because "he's Yale '53 and I'm Princeton '52." Though always regarded as a maverick within the financial community, Secretary of the Treasury Donald Regan (Harvard '40) was a ranking figure within the Wall Street establishment by right of his role as chief executive at Merrill Lynch. Secretary of Transportation Drew Lewis (Harvard Business School '55), the acknowledged star among the domestic service department chiefs, was a Rockefeller delegate to the 1968 Republican convention. Even Secretary of Defense Caspar Weinberger (Harvard '38, Harvard Law '41) was a leader of the progressive wing of California's Republican Party before joining Reagan in Sacramento.

Of course not all Ivy Leaguers or Wall Streeters are moderate or progressive Republicans. Secretary Weinberger, for instance, has joined fundamentalist hardliners within the administration on most questions touching relations with the Soviet Union. But many of Reagan's appointees from establishment backgrounds have, to the outrage of the fundamentalists, preserved policy directions associated with their origins. Secretary of State George Shultz (Princeton '42), for example, has—like his predecessor, Alexander Haig, also an establishment product—maintained the emphasis on the Atlantic alliance that has always been a chief article in moderate and progressive foreign policy doctrine. And Secretary Regan has upheld fiscal pragmatism against the more radical notions of supply-side economics.

During Reagan's first year, moderate and progressive Republicans in both Congress and the statehouses, with few exceptions, strongly supported the administration's program, though it seemed at some points to go against the grain of their traditional commitments. There were several reasons for this. First, the moderates and progressives recognized the president's popularity and aimed to share some of its luster. Second, many of them were convinced that the welfare of the Republican Party, including their factions as well as his, was at least for the time being inextricably tied to the administration's success. Third, many of Reagan's initiatives expressed elements in the moderates' and progressives' own philosophies—though he often carried these beyond what they would have preferred. Moderates and progressives, like most other American conservatives, believe deeply in the ideas of federalism and the market system. Both ideas have been given new life by Reagan.

In 1982, however, differences began to open between the moderates and progressives on one side, and the fundamentalists on the other. On the so-called social issues, such as abortion, school prayer, and busing, moderates and progressives are more concerned with protecting civil liberties and civil rights than are most of the fundamentalists. More important, moderates and progressives go further than the fundamentalists in accepting government as a legitimate tool for social progress. Though not sharing the almost unlimited confidence in the beneficial effects of government expressed by socialists and most modern liberals, moderates and progressives, drawing on the part of conservative philosophy that emphasizes the interdependence of social units, regard government as an appropriate agency for carrying out social purposes that individuals cannot, in Lincoln's words, "do as well or better for themselves."



Yellow jacket

Promising progressives or moderates who survived 1982's midterm Republican setbacks include Governors Richard Thornburgh of Pennsylvania and Lamar Alexander of Tennessee, and Senators David Durenberger of Minnesota and John Danforth of Missouri.

Some elements within the Reagan coalition, particularly some of the fundamentalists, are disturbed by the president's moves away from dogmatic ideology, as in his acceptance of the 1982 tax bill and his cautious approach to the Soviet Union, and by his inclusion within the administration of persons holding somewhat different points of view. But the United States is so diverse a country that a party or an administration tightly limited by rigid ideology could hardly survive, let alone govern effectively.

This is not to say that the administration does not need some underlying guiding principles. If the examples of Woodrow Wilson and Herbert Hoover show the dangers of ideological inflexibility, the more recent example of the Carter administration reveals the extreme perils that go with unstructured ideological confusion. The president is quite right to stand on a broadly consistent program, and to ask that his administration be judged on the validity of its governmental principles, as well as on operational efficiency. The trick is to keep that program sufficiently wide and inclusive to maintain general social harmony and achieve enduring political success. (B)

Energy Security and the Common Interest

The threat of a third
oil price shock is still with us.
There are ways to avoid it.

Edward Fried

IT IS FAIR TO SAY that the subject of energy security is going out of style these days. Unfortunately, I fear, it will return to center stage.

Up to now, improving energy security has been the exclusive concern of oil-importing countries. Specifically, the problem has been seen to have two aspects. First, what financial investments and political commitments should the industrial countries undertake to limit damage from oil supply interruption? Second, what could be done to increase energy investment in the oil-importing countries?

However, still another question is coming to the fore: What constitutes energy security for the oil-exporting countries and how does it fit into the general picture?

Energy security planning for the industrial countries centers on the International Energy Agency, which has the major responsibility for coordinating their energy policies in a crisis. When the IEA was established in 1975, oil-exporting countries saw it as a means of generating consumer market power to counter the spectacular exporter market power. But the IEA was never confrontational in character. It could not be; effective emergency responses to an oil supply shortfall have to include the implicit cooperation of exporters prepared to use surplus capacity to help offset the supply shortfall. So though there is inherently a strong element of conflict between the interests of exporters and importers in how oil markets perform, there also are important areas of overlapping interests.

My purpose is to show why markets are moving away from confrontation toward cooperation. As a consequence of the turbulence of the past decade, the oil world may be near an important divide, characterized by a common concern about market security on the part of exporters as well as importers. I will also explore some policy implications of that proposition.

As a first point, it is necessary simply to restate the disturbing relation between rapidly rising oil prices and economic growth. Ten years of upheaval in oil markets have run parallel with a dreary transformation of the world economy—from self-confidence to self-

doubt, from sustained, rapid growth to stop-and-go, low growth. The correspondence of these two trends is no coincidence. The oil price shocks of 1973–74 and 1979–80 were important causes of the sharp turn for the worse in the world's economic performance.

Other factors certainly were at work, particularly in the early 1970s, when a boom in non-fuel commodities, a breakout of grain prices, and a synchronized expansion that strained capacity made the world economy unusually vulnerable to new shocks. Each of these factors was destabilizing, but each corrected itself fairly quickly. The oil price shocks, however, were much larger and proved to be more indigestible.

Since 1973, OECD economic growth has averaged only half as much as it did in the preceding decade, inflation has doubled, and unemployment as a percent of the labor force has doubled. In the oil-importing developing countries, the average rate of economic expansion has dropped by one-third (recently by more). Today's bleak economic outlook testifies in part to how much time it takes to adjust to oil price shocks.

To say that is independent of the question of whether the present real price of oil is too high, or too low, or just right in the sense of what is necessary to facilitate an orderly energy transition. The answer to that question is no longer self-evident, one way or the other, which is also part of the story. What I want to stress now is that what happens to the price of oil critically affects the performance of the world economy and, with it, the future course of oil markets.

A second point is that the battle over oil rents, waged through the medium of two supply interruptions and two price shocks, turned out to be very heavily a negative-sum game. Importers lost very much more than exporters gained. Furthermore, although exporters benefited handsomely, they gained considerably less in real economic advance than would have been expected and had to accept greatly increased uncertainty about future markets as well. In both cases, the reason was the same: the inefficiencies that seem to be inherent in adjusting to sudden, quantum changes in fortune, good or bad.

The loss to importers is seen clearly in the events of 1979–80 and their aftermath. Initially the increase in oil prices over the two years meant a transfer of resources of \$240 billion a year in nominal terms from importers to exporters (\$200 billion from industrial countries, \$40 billion from developing countries). These income losses by importers had their counterpart in income gains by exporters. This is a characteristic phenomenon of a commodity boom; the element that is unique is the size and speed of the transfer, which in fact led to the ominous ramifications described earlier. Over the next two years (1981–82), these incremental transfer costs in real terms declined by one-third, because of the drop in import volume and prices, which themselves were the result, direct and indirect, of the initial oil price shock.

In addition, importers suffered huge income losses for which there were no counterpart gains by exporters. OECD estimates indicate that the economic disruption costs of the oil price shock will reduce OECD output by some \$400–\$500 billion (1981 dollars) below what it otherwise would have been.

Such disruption losses stem from limitations in the capacity of industrial economies to adjust smoothly to very large external shocks, such as quantum jumps in the price of oil. Other prices do not fall when oil prices rise, wages tend to be rigid as labor seeks to avoid the real income losses stemming from rising energy prices, sudden large distortions in international payment balances influence trade and monetary policies, and widespread uncertainty and apprehension adversely affect investment and consumption. On top of all this are the feedback effects of similar developments in other countries.

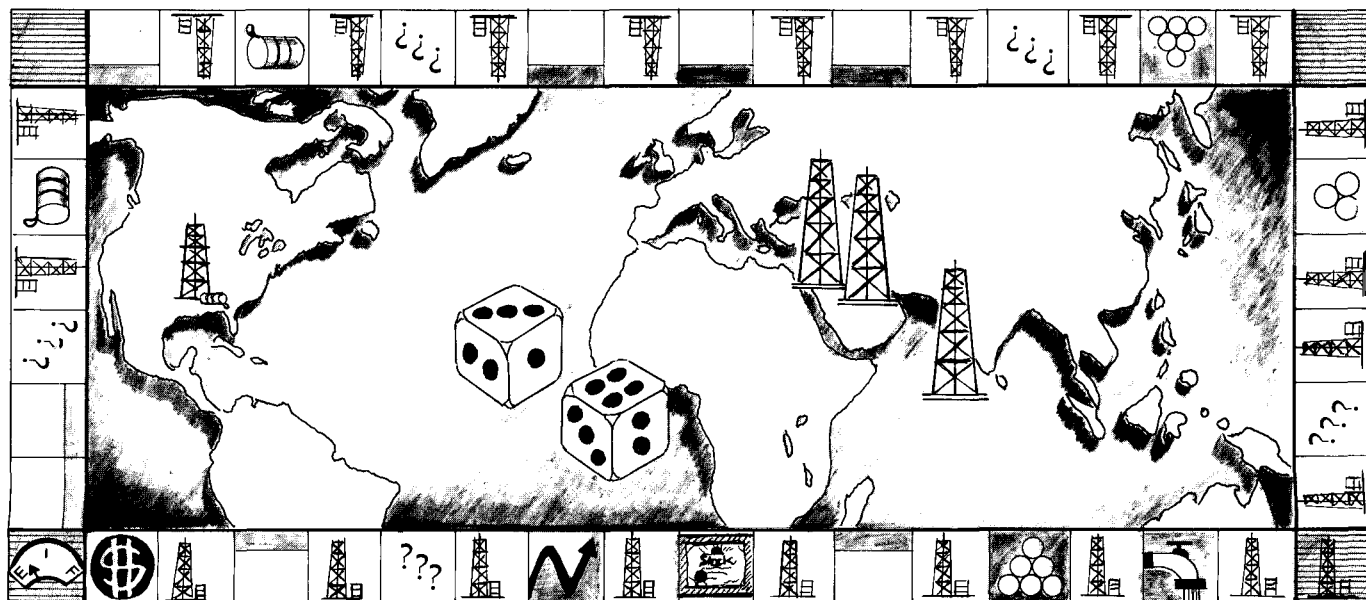
Even then, these losses are understated. No allowance is made for the accelerated obsolescence and reduced utilization rates of the energy-intensive capital stock, which represents efficient energy adjustment but probably reduces productivity.

Less work has been done on estimates of comparable losses in output for oil-importing developing countries. A plausible assumption is that oil price shock indigestion is responsible for about half the deterioration in their recent economic performance, suggesting total disruption costs of \$50–\$75 billion (1981 dollars), before trend economic growth is restored. Again, these costs to importers represent income losses for which there are no counterpart gains to oil exporters.

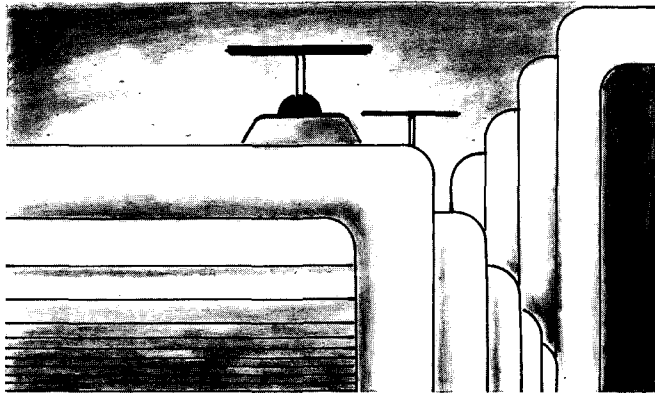
For exporters, adjusting to good fortune involved no pain, but the final box score looks as though it will contain some grave disappointments. In addition to the decline in incremental revenues is the even more serious tendency for sudden, large receipts of revenue to lead to boom and waste. A review of what has been happening in oil-exporting countries in the wake of the price jump of 1979–80 is replete with instances of new or larger subsidies to consumption, costly overemphasis on capital-intensive investments, the misallocation of resources attributable to inherently overvalued exchange rates, and a general disposition to do too much too quickly.

A startling fact emerges from the data appearing in the 1982 World Development Report. The average rate of economic growth of oil-exporting countries as a group in the past ten years is lower than it was in the period 1960–73. It draws further credence from the extraordinary difficulties now confronting a number of oil-exporting countries, such as Mexico, Nigeria, and Venezuela.

How could this be possible? The inefficiencies mentioned earlier are certainly a part of the explanation. The feedback effects of lackluster performance in the rest of the world may be another part, but likely a small one. A general implication is that a sudden burst of new revenue followed by cutbacks is far less of a boon than gradual, sustained additions to revenue, which have greater promise of effective use. This point should be brought to bear on oil strategies.



A third point has to do with the question of the future course of oil markets. A consensus answer to that question no longer exists. The very strong decline in demand, thus far, in response to the 1979–80 price jumps was something of a surprise. How durable will it be? The weakness of economic recovery is also a



surprise. How long will it persist and does it portend a distinctly lower long-term growth path for the world? There are other variables: for example, new oil discoveries, the capacity for fuel switching, technological breakthroughs, and the role of nuclear power.

In the face of these uncertainties, a wide range of oil futures becomes possible. A plausible case can be made that the real long-run price of oil will either rise significantly, or moderately, or not at all. I personally believe a gradual, moderate rise is in the offing, beginning a few years hence. Yet, it can also be argued, reasonably, that a producer strategy designed to maximize long-run revenues would lead to lower oil prices than those existing today.

These uncertainties strongly suggest that the battle over oil rents—certainly the phase in which very large new gains or losses can be anticipated—is just about over. They also explain why resource-rich exporters concerned about long-term revenue maximization would have a different approach to market pricing strategy from those countries whose exportable supply is soon to run out.

This leads directly to the fourth point: Are future oil shocks possible, and if they occur, will they produce any winners, or will everyone be a loser?

Supply interruptions are surely possible, if not probable, over the course of the decade. That presumption stems directly from the unusual concentration of oil resources in the Middle East, the existence of chronic political tension there, and the fragility of oil supply lines. As in the past, such interruptions are likely to be temporary and reversible. Even so, a large shortfall coming at a time when the market has begun to tighten raises the danger of another price jump.

But there is more to the story than that. A third oil

price shock will certainly have all the costly consequences of its predecessors, and perhaps more. Another world recession coming with economic and financial institutions not fully recovered from the economic disasters of the past decade will be that much more long-lasting and damaging.

A third oil price shock will also set in motion another wave of structural adjustments leading to a further decline in the relative use of energy in economic output and to a wholesale substitution of other primary energy fuels, including synthetic fuels, for conventional oil. These adjustments will require huge investments, which inevitably will be made, although at great cost to current world output and consumption. Once in place, or substantially in progress, these investments will be protected, notwithstanding a subsequent decline in the price of oil. Shaken to its roots a third time, the oil-importing world likely will bear the cost, large as it will be, of protecting itself against a fourth price shock. Oil markets, thereafter, will be dominated by a chronic overhang of excess productive capacity.

A Producer-Consumer Agreement?

Does this not suggest, rather conclusively, that there will be few, if any, winners from a third oil price shock? Oil importers clearly will lose a great deal, once again; in the end, so will oil exporters. If so, what could be done by both importers and exporters to reduce the economic damage from a supply interruption, that is, to avoid another episode of markets getting out of hand?

One frequently mentioned possibility is a producer-consumer agreement to ensure a reasonably stable price path for oil. Such agreements exist for a very few commodities, with mixed results.

When the oil market looks to be uncontrollable on the upside, many importers suddenly see great merit in a producer-consumer agreement and almost convince themselves that it is the only long-term solution to the oil problem. When markets turn slack, the many operational difficulties in making an oil agreement work, or, more accurately, in obtaining price security from an agreement, suddenly become very vivid. I have not seen many comments from exporters on this subject, but I suspect their attitudes, in reverse, are not too different.

Perhaps a producer-consumer agreement directed toward stabilizing the price of oil will be possible some day. I am skeptical. Discussions about what price stability means, whether it makes sense, and how it could be achieved could go on for years.

In any event, trying to make stable prices a permanent feature of the oil landscape goes well beyond what is necessary for the market security problem. We should expect gradual changes in oil prices, up or down, in response to shifts in underlying factors. Price shocks are an entirely different matter. Defenses against

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them could be strengthened by informal understandings between importers and exporters about complementary action in an emergency, or even by closer analysis of what is at stake.

Increase Emergency Stocks

To be specific, the major defensive action importers can take is to release emergency stocks on the market to offset in whole or in part the effects of a sudden interruption of normal channels of supply. The IEA system, among other measures, provides for carrying emergency stocks for use in this kind of situation. The problem is that present IEA requirements for holding emergency stocks are not high enough, and the usability of these stocks is open to serious question. These requirements should be increased and the additions should take the form of government-held, rather than industry-held, reserves, whose use in an emergency would be unambiguous. The United States, Japan, and Germany have been moving in this direction. Other industrial countries should follow suit so as to increase the prospects and the capacity for coordinated defensive action.

At times, exporters contend that the building of consumer stocks is a threat to their market interests and a transparent attempt to weaken OPEC's market power. This allegation should be candidly faced.

Stocks held by industry in excess of the amount needed to satisfy IEA emergency requirements have fluctuated widely over the past few years. Their buildup contributed to the price jump of 1979-80; their subsequent drawdown is contributing to the slackness of current markets. There was nothing conspiratorial about such tactical moves in inventory strategy, either in 1979-80 or in 1981-82. The buildup was a response to uncertainty of supply and expectations of further increase in price; the drawdown is a response to high carrying costs, declining demand, and weak prices.

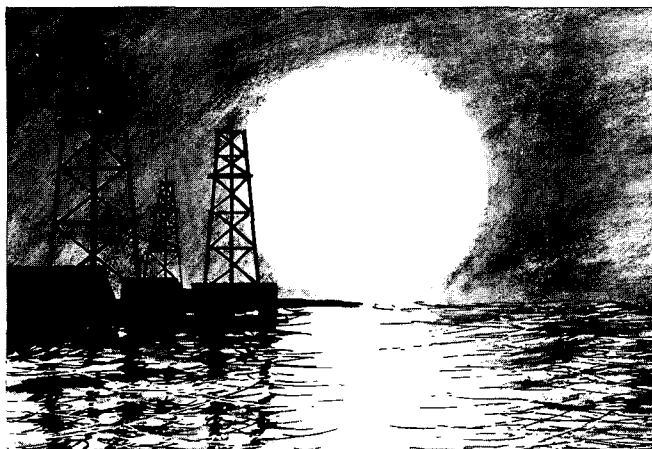
On the other hand, mandatory stocks, whether held by industry or by governments, are locked in for use in an emergency, not for use as a buffer stock to influence day-to-day operation of the markets. The real purpose of government stocks is market security. Their use will depend on an intergovernmental decision, which will not be taken lightly. To my mind, the danger lies in the opposite direction; governments will be overcautious in coming to that decision, worried about holding these stocks until the shortfall becomes even more severe. If so, it may become a case of too little, too late, with the price shock already upon us.

Emergency stocks held by importers should be seen as the counterpart to the existence of surplus capacity in some of the major exporting countries. Both should be used to reduce the economic damage from a sudden oil supply interruption. Each should complement the other. Use of emergency stocks by importers will facilitate operation of the IEA sharing system. Increases

of production by those exporters not affected by the causes of the shortfall could be directed in whole or in part to importing countries that have been most heavily caught short. As mentioned earlier, some exporters acted in this way in 1979 and 1980, to their ultimate benefit and to the common benefit. Would it be possible to create greater assurance that such surplus capacity will exist in the future and will be used?

Such actions by importers and exporters would offset supply shortfalls and allay panic in markets. Both would improve market security in the critical sense of restraining the tendency of the market to overshoot in this type of situation and therefore of avoiding a third price shock.

If avoiding such price shocks is a common concern of importers and exporters, as I have argued it is, there should be a closer interchange between them about market prospects, the operation of emergency systems, and how they could be strengthened. Regular meetings on a technical level between the secretariats of OPEC and the IEA would be a good beginning. There should be no mystery about what each group will try to do, or could do, in an emergency. To the contrary, a regular program of confidence-building measures could in itself be a factor in reducing the danger of market panic and, therefore, of the price shock that both sides should be seeking to prevent.



I believe the danger of such a price shock continues to be a serious threat on the international economic horizon. It is not an imminent threat. A combination of temporary and structural factors has produced an unusually large amount of excess capacity which provides a margin of safety for the next few years.

That margin of safety will gradually diminish and could well disappear entirely over the course of this decade. On the other hand, a sudden interruption of oil supply will be a continuing risk. Time is available for both importers and exporters to improve the security of the oil market. The experience of the past ten years is convincing evidence that it would be in their common interest to do so. Not using this opportunity could inflict damaging economic and political losses on the world. They would be unnecessary losses. ⑥

Small Business—How Many Jobs?

Its contribution to net job growth is about proportional to its share of the American labor force.

Catherine Armington and Marjorie Odle

SMALL BUSINESSES have been filing for bankruptcy in record numbers for the past several years, and considerable attention has been given by the press, academics, and policy makers alike to the role they play in the American economy. Among the common, if not universal, beliefs is that the small business sector is a powerful force for technological innovations, stimulates development of severely depressed regions, and creates many, perhaps most, new jobs.

The difficulty with these beliefs is that they are based on a very limited amount of knowledge about the dynamics of small-business activities, as well as incomplete data. These are major obstacles to an accurate assessment of the real impact of small businesses on the economy and, consequently, to the formulation of appropriate public policies. Our purpose here is to examine one aspect of small-business activity, patterns of job creation, and to suggest several policy implications.

The role of small business in creating jobs cannot be adequately evaluated from aggregate data. Consequently, this analysis uses a new microeconomic data base being developed with the support of the Small Business Administration's Office of Advocacy to facilitate broad-ranging research on the behavior of small businesses and their current strengths and weaknesses. Microeconomic data for 1978 and 1980 were derived from Dun and Bradstreet's files for more than five million business establishments. Reports for 49 percent of the establishments were not sufficiently current or well defined for indicating employment changes, so a weighting scheme was devised to prevent the biases in reporting from affecting the growth calculations. Each business was classified by number of employees in 1978. Then employment changes during the 1978–80 period were measured.

These procedures created a research data base which we have used to investigate employment dynamics in various sizes of businesses. Our results may be influenced by the fact that the time period ends in a recession, but we have no reason to expect that downturn to affect them substantially. The methodology developed for 1978 and 1980 is being extended to data for 1976 and 1982. The resulting data base will be used for further study of business employment dynamics.

From 1978 to 1980, private sector employment increased 8.7 percent, or roughly 4.3 percent annually. About 78 percent of this increase occurred in establishments with fewer than 100 employees; yet these establishments employ only 49 percent of the private sector labor force. On an establishment basis, therefore, small businesses employ about half the nation's work force but generate nearly eight of every ten new jobs. These figures indeed support the conventional wisdom that small businesses create most new jobs.

But with our new data base, we now have the flexibility to classify businesses not just by the number of employees at each location, but also by the size of the whole firm—the aggregate employment of all its branches and subsidiaries.

It is the parent firm that makes the business policy decisions that determine much of the behavior of the neighborhood branch of the department store, the business office of the telephone company, or the local cannery of a large food-processing company. Similarly, most government policies affecting businesses are directed at the legal and financial entity, the parent firm. So although the number of employees at the establishment location may be the appropriate unit of measure for studies of management techniques or sociology of the work place, the size of the entire firm's work force is the preferable measure for evaluating the effects of public policy on small business and assessing the impact of the small-business sector on the economy.

Establishment size is often used as a proxy for firm size because it is more frequently available and is the same for many businesses. Indeed, 91 percent of businesses with employees have only a single location, so their firm size and establishment size are the same. However, the other 9 percent that are multi-location firms employ 62 percent of the private sector work force and consequently have a substantial impact on aggregate measures.

A significant portion of the growing small *establishments* are branches or subsidiaries of large *firms*, and when employment growth is measured by the size of the firm rather than by the size of the individual establishment a sharply different picture of the role of small business in the job-creation process emerges.

When "small business" is defined as all establish-

ments in firms with fewer than 100 employees, then small businesses employ 36, not 49, percent of the labor force and generate 39, not 78, percent of net new jobs. This more limited definition of small business still includes 86 percent of the business establishments in the United States. We will use only this definition for the rest of this study.

To get a better understanding of the underlying dynamics of business employment change, we need to break down the net growth figure into components of change—job generation in new establishments (births) and in expanding establishments, and job loss in discontinued establishments (deaths) and in contracting establishments.

A Different Microeconomic Picture

The 8.7 percent overall growth rate in private sector employment between 1978 and 1980 is not a measure of the rate at which most businesses expanded employment. In fact, the microeconomic picture is quite different: It is one of violent growth and shrinkage in a minority of businesses contrasted with stability in the majority of businesses. Specifically:

- Nearly three-fifths of the businesses reported the same number of employees in 1980 as in 1978.
- Roughly one-third of the businesses reported a change in employment from 1978 to 1980, with 20 percent expanding and 11 percent contracting. The excess of expansion over contraction accounted for 81 percent of net employment growth.
- The remaining 9 percent of businesses existing in 1978 had ceased operations by 1980. These deaths were more than offset by the births of new establishments, which accounted for 19 percent of net growth.
- On average, each percentage point of net employment growth in the aggregate is the net combination of 1 percent growth due to births, 1.7 percent growth due to expansion, .7 percent loss due to deaths, and 1 percent loss due to contraction.

These patterns were essentially similar for large and small businesses, although establishments that were part of large firms were somewhat more volatile. About 23 percent of large-firm establishments were expanding, compared with 20 percent of small-firm establishments. Another 13 percent of the large class were shrinking, against 11 percent of the small class. Rates of establishment births were similar—12 percent for

large firms compared with 10 percent for small firms.

The total shift in employment resulting from each type of change is shown in Table 1. The bottom line shows how much of the change in each type is attributable to change in small business. The small-business shares of employment growth from new establishments (37 percent) and expanding establishments (40 percent) are close to the small-business share of total employment (36 percent). However, the small-business share of employment loss due to contraction is lower (31 percent) and that due to death is very high (47 percent). This is too not surprising. When a large business loses five employees, the loss is classified as a contraction, but if the business had only five employees, it would be a death. Furthermore, entrepreneurs sometimes find it preferable to discontinue a small business and start a new one when conditions warrant it. Small firms are less able to survive periods of economic difficulty because they lack access to the financial resources available to larger firms.

Aggregate figures for net change may be deceptive, masking important variations in the components of growth. A more accurate assessment of change is possible if these figures are disaggregated into their components of growth. Among large firms, employment gains from births of new establishments are about equal in every industry and are about 2 percent greater than losses due to deaths. For small businesses, generation of new jobs by births just offsets losses through deaths. Small firms, the majority of which are independent establishments, are more likely to expand at existing sites than to open branch offices. Death rates are reasonably similar across industries, but average 8 percent of small-business employment against 5 percent of large-business employment. Rates of job creation from expansion of existing establishments were correlated with the job loss rates from contractions in each industry. However, the expansion rates were two to three times higher, and were more variable.

Small businesses generally have larger shares of slower-growing industries. The industries in Figure 1 are arranged from slow to fast growing, showing how both the employment and the growth share of small businesses are lower in the faster-growing industries.

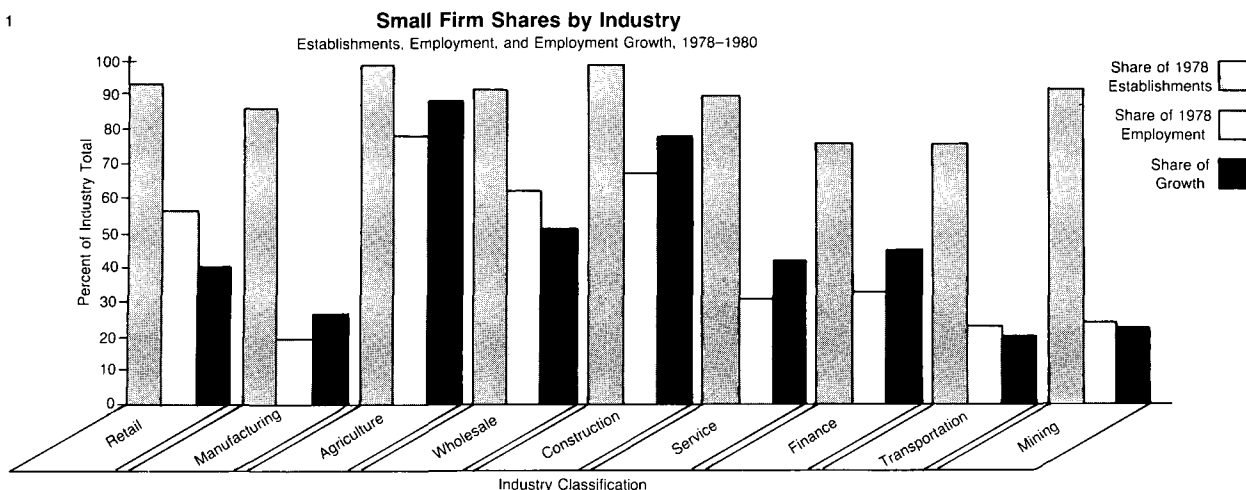
Employment increased in all industry divisions between 1978 and 1980, but the increase was small in three industries—agriculture, manufacturing, and retail trade—and barely average in wholesale trade and construction. Except in manufacturing, small busi-

Table 1

Small Business Shares of Employment Change, 1978–1980

Establishment Category	Employment in Thousands					
	1978 Total	1978–80 Net Change	Births	Expansions	Contractions	Deaths
All Establishments	81408	7104	6333	11453	– 5723	– 4959
Small-Firm Establishments	29177	2780	2317	4547	– 1747	– 2336
Small Business Percentage Share	35.8%	39.1%	36.6%	39.7%	30.5%	47.1%

Figure 1



nesses employ a higher-than-average share of workers in these slow-growth and average-growth industries. But in high-growth industries—mining, transportation, finance, and services—small firms employ a below-average share of workers.

Furthermore, three of the five slow- and average-growth industries have relatively strong small-business sectors—that is, the small-business contribution to growth exceeds its share of employment. This reinforces the observation that small businesses tend to register gains in weaker industries.

Rates of Job Creation

The rough correspondence between the small-business share of private sector employment and its somewhat larger share of employment growth holds for most regions and industry divisions. The exceptions occur primarily in slow-growing industries, where small businesses have a much higher share of growth and increase their employment shares.

Conversely, in fast-growing regions the small-firm share of growth is less than its employment share. This seems to be due to high rates of employment loss from small-establishment deaths, which are associated with the increasing shares of employment in large firms. Consequently, small firms exert a stabilizing influence, moderating the overall rates of economic growth and decline in different geographic regions.

The decline of the Northeast is manifested in its low rate of job creation. The New England, Mid-Atlantic, and East-North Central states accounted for 44 percent of the nation's private sector employment in 1978, but only 26 percent of the 1978–80 growth. States in the West-South Central, Mountain, and Pacific regions, in contrast, accounted for only 28 percent of 1978 employment, but 46 percent of net employment growth, rapidly expanding their shares of employment. The

South Atlantic region had a growth rate second only to the Pacific region.

The shift of employment toward the South and West reflects several factors. Movements of population both lead and follow employment growth. The accelerating economic development of the South and West, combined with the search for a better quality of life, has attracted many people who further stimulate growth.

Simultaneously, the North continues to decline as a major provider of jobs in the United States. Population shifts, the decline of heavy manufacturing industries, and the shift of defense contracts to industries in the South and West have all contributed to the reduced share of employment in the North and Northeast.

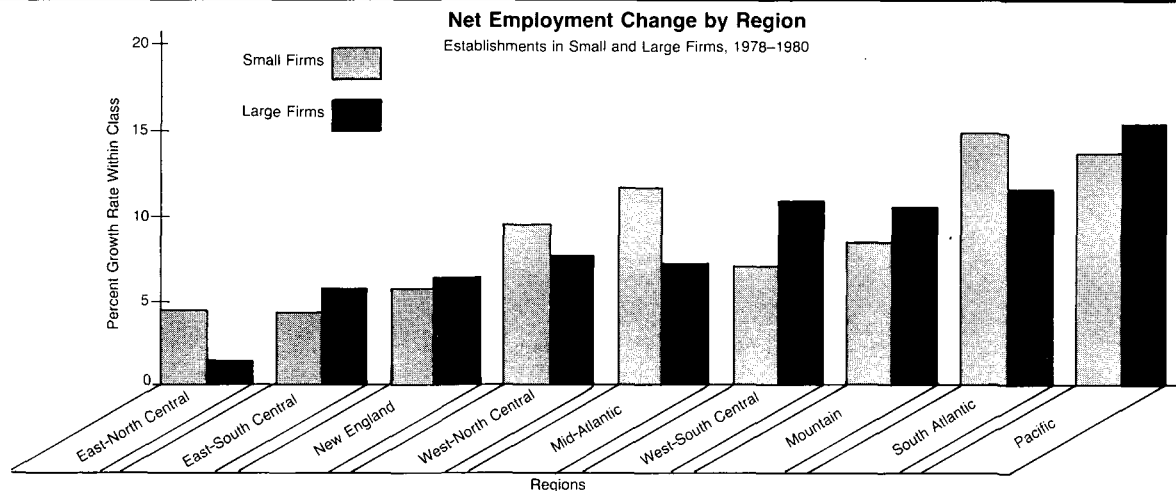
Employment in large-firm establishments grew faster than that in small-firm establishments only in three fast-growing regions in the Southwest and West. If we divide the nation into the relatively weak North/Northeast area, including the West-North Central states, and the relatively strong South/West area, we find a remarkable correlation between regions with overall low growth and regions where small-business growth rates were higher than those of large business. The South Atlantic region is the only clear exception to this, with a 13 percent growth rate overall and a small-business growth rate of nearly 15 percent for the 1978–80 period. In the troubled East-North Central region, small business accounted for 70 percent of the employment growth, primarily because large businesses there had both low expansion rates and high contraction rates, resulting in net growth of under 1 percent.

Rates of loss of employment were quite constant across regions, for both large and small businesses, from both deaths and contractions. They rarely varied as much as a single percentage point from the small-business loss rate of 14 percent or the large-business loss rate of 12.8 percent. Thus the variations in regional net employment change rates were due principally to differences in rates of birth and expansion.

The tendency of small business to have high net growth rates in regions where large business is relatively slow growing suggests that large-business expansion plans dominate the short-run supply of labor,

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Figure 2



locations, and capital. Their greater financial resources permit large firms to outbid small firms if they decide to open a new branch or expand an establishment. Conversely, the contraction of large business frees up resources for the expansion of small business.

Regional employment gains due to expansion of existing businesses were roughly twice those due to start-ups or births of new establishments. But the rates of growth from these two types of gain did not always vary together. The fast-growing West-South Central and Mountain regions showed large gains from expansion, but their small gains from business births were more than offset by business deaths.

Losses in Weak Regions

The three weakest regions—East-North Central, East-South Central, and New England—all had losses of about 2.5 percent of employment due to turnover (births less deaths) in small-firm establishments, and gains of less than 1 percent from turnover in large-firm establishments. It was principally by expanding employment in existing businesses that these depressed regions continued to provide new employment opportunities. Attracting new businesses to depressed areas does not seem to be a very successful tactic for regional development.

At the other extreme, the four strongest regions all had extraordinarily high rates of employment loss due to deaths of small-firm establishments. These discontinued businesses seem to be providing the resources for births and expansions of other businesses. A portion of these deaths may represent acquisitions resulting in a substantial change in management, which would be recorded as the death of the original and birth of a similar establishment.

In general, the new employment growth contributions of both small and large businesses appear to be roughly proportional to their respective shares of the labor force. The two-year growth rate of employment in establishments in firms with less than 100 employees was 9.5 percent, compared to 7.3 percent in establish-

ments in large firms. If small businesses are contributing little more to employment growth than their own employment share, should they be the focus of local development plans?

Although the increase in local employment attainable through attracting a large branch of a major firm is substantial, such occurrences are relatively rare and are unlikely to provide the jobs needed for economic revitalization or survival. Furthermore, larger firms have the financial and managerial resources to shift their focus to expanding industries and regions, while curtailing operations in declining areas. Thus an obvious note of caution is due against overreliance on attracting branches of large multi-location firms as a foundation for long-term economic development.

An intrinsic part of the community, small business is more responsive to local influences, more willing to adapt to local conditions, and less likely to migrate to other locations. The tendency of small businesses to enter and expand into relatively weak areas of production (those without large-business competition) provides an important moderating influence that can slow or even interrupt the decline of weakening regions and industries. The higher average rate of employment growth in small businesses provides better long-run prospects for measuring job opportunities.

In the period from 1978 to 1980 expansion of existing businesses created nearly twice the number of jobs as start-ups of new businesses. Other studies have shown that the majority of new business establishments do not survive four years. These two factors raise doubts about the potential effectiveness of development policies focusing on attracting new business establishments and preventing business failures. Policies designed to encourage or facilitate expansion of existing businesses have a much larger audience. If they are successful there is a much lower risk of the employment gain being only temporary. Tax incentives, deregulation, patent protection for innovations, and easing of licensing requirements are among the policies which can be effective, locally or nationally, in stimulating growth in existing business, if aggregate demand is adequate.

The Interferon Dilemma: Secrecy v. Open Exchange

Will proprietary rights
impede the progress
of the biomedical revolution?

Sandra Panem

AT THE SECOND International Congress for Interferon Research, held in October 1981, a speaker from New York University presented results on the purification of gamma-interferon, at that time the most elusive of the human interferons. He reported that after a laborious procedure he could define two forms of the molecule, but the procedure required him to use a detergent which resulted in 90 percent loss of biological activity.

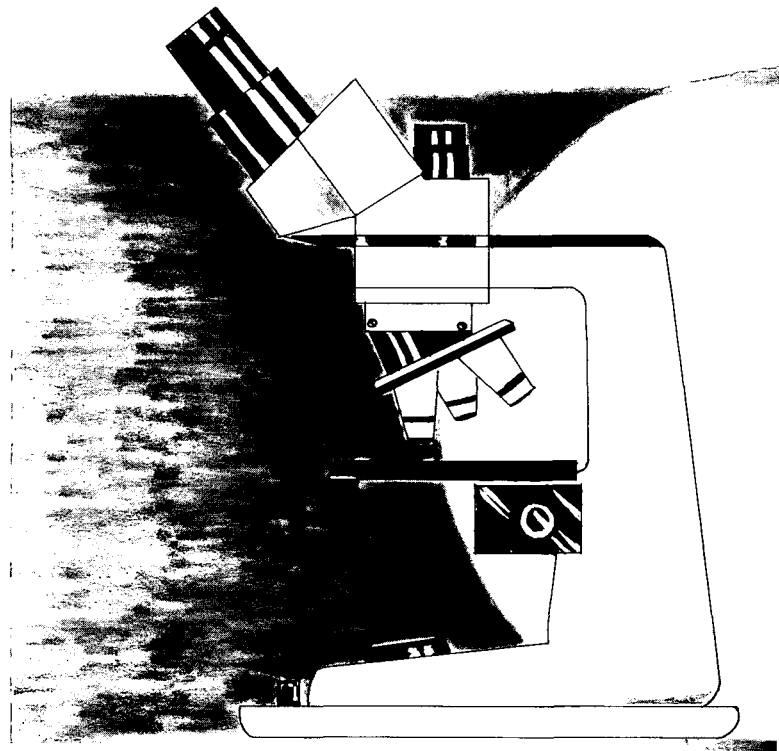
In response to his remarks—in the classic manner of open discussion of research in the biomedical sciences—a member of the audience rose to confirm that gamma interferon could be isolated in two forms, and added that the 90 percent loss of activity could be avoided by using a new detergent. The NYU speaker, in turn, inquired about the detergent. The man in the audience replied that he could not disclose the name of the detergent because his company had submitted an application for a patent.

At an international meeting for interferon research held in March 1982 at Squaw Valley, California, Jordan Guterman of the M. D. Anderson Hospital and Tumor Institute in Houston, Texas, described the first results of clinical experimentation with gamma-interferon in cancer patients. When asked about the nature of the interferon preparations used, Guterman deferred the question to a representative of the drug manufacturer, Meloy Laboratories. The representative said the protocol employed to produce the interferon was so novel that the firm had applied for patent protection and could not yet make the information available. But, came a challenge from the audience, substances other than interferon might have been in the preparation, and without the details of composition, the audience could not adequately evaluate if a patient's response should be attributed to interferon. The manufacturer's spokesman replied that the clinical protocol had received approval from the Food and Drug Administration, that experts had been convinced that the preparation was interferon (although they were sworn to secrecy because of the patent application), and the audience should take his word for it.

These kinds of incidents fire the fears of some

members of the academic biomedical research community that the development of commercial interests in modern biology will further alter one of the basic characteristics of the discipline—free and uncensored exchange of information. Some fear that information will never be disclosed. Access to information is crucial to the scientific process because it is only by evaluating others' work that scientists plan their attempts to confirm, extend, or discount findings. This process develops the consensus which is accepted as scientific fact.

Are the fears about secrecy new? Is secrecy an inevitable consequence when a field matures from being an esoteric, basic science area into one ripe for commercial development? Has there been a quantitative or qualitative change in secrecy as commercial biotechnology has grown? Is there a difference between secrecy imposed by individual choice and contractual agreement?



Interferon is a good field to discuss such questions because it is one area of biomedical research whose dimensions have been radically altered as a result of genetic engineering, and because interferon was the "demonstration project" chosen by many commercial firms for genetically engineered pharmaceuticals.

Interferon was discovered some 25 years ago by the late British virologist Alick Isaacs and his Swiss collaborator, Jean Lindenmann, who observed that cells produce natural protein which "interferes" with virus infections—hence the name interferon. For some time interferon was thought to have only one important function—to help the body fight virus infections. We now know that there are at least 20 different forms of interferons that can differ from each other quite substantially, and that this complicated system of hormone-like substances is involved in the regulation of immunity and possibly in embryonic development, growth regulation, and nerve function.

Interferons are classified into one of three major groups (alpha, beta, and gamma) depending on which cells in the body synthesize them and the events which trigger their production. The regulatory properties of interferon are probably the underlying reason for the widely publicized belief that it might be effective as a drug to treat cancer patients. The hope that interferon could be developed as an antitumor drug led the youthful genetic engineering industry to invest in interferon research and development in the late 1970s.

Why would genetic engineering make a difference in commercial development of interferon? Interferon was touted by its supporters in the seventies as an antitumor agent, but the data were not fully convincing, amounting only to what the medical community calls "anecdotal" evidence. Until the American Cancer Society (ACS) earmarked \$2 million in 1978 to test interferon on patients, there were no well-controlled trials anywhere in the world.

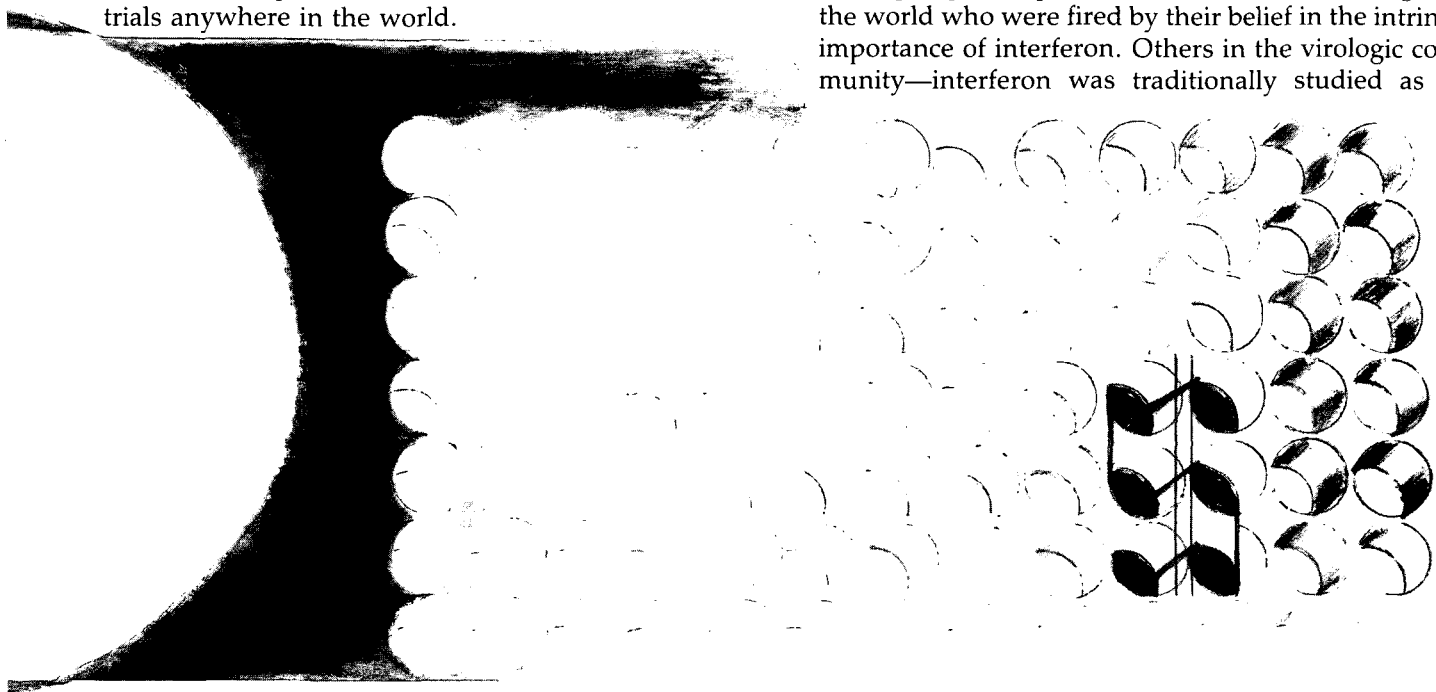
The absence of iron-clad evidence was in part due to limited clinical experimentation, which reflected the three-part problem that plagued interferon research for 23 years—lack of pure interferon in sufficient quantity at a reasonable cost.

Interferon is a natural product made by living cells in only minute quantities. In 1978, it cost \$30,000 to buy enough interferon to treat a single patient. And interferon was only 0.1–1.0 percent of the protein in the preparations. If a preparation had an effect, the active principle might well be in the 99–99.9 percent of the protein which was not interferon. So not only were experiments very expensive, but the results were doomed to be inconclusive.

As for quantity, one example tells the story. When the American Cancer Society spent \$2 million for interferon from the Finnish interferon pioneer Kari Cantell in 1978, it purchased nearly one year's production from the then-largest interferon producer.

The application of genetic engineering technology to interferon production solved purity, quantity, and cost problems. In 1982 preparations of interferon are 100 percent pure, and a single course of treatment costs about \$300. So many corporations now produce genetically engineered or "recombinant" interferon and vie for FDA approval that a limiting variable in doing adequate clinical experiments is finding a medical center with both an appropriate patient population and researchers who can carry out a controlled clinical trial program.

With the application of genetic engineering to interferon, more information was acquired between 1980 and 1982 than in the preceding 23 years. The information explosion was accompanied by interest in interferon by a new sector of the scientific community. For two decades, interferon had been pursued by a small group of experimentalists scattered throughout the world who were fired by their belief in the intrinsic importance of interferon. Others in the virologic community—interferon was traditionally studied as an



antiviral substance—viewed the interferonologists as a fringe group working with a substance which eluded critical chemical characterization and which was strictly “phenomenology.” (Some called it “imaginon.”)

Recombinant DNA technology brought interferon into the molecular age; its antitumor potential made study of it fashionable. Once thought of as a kind of halfway house between academia and the drug industry, it became the vanguard of the new biology. And along with the arrival of young molecular biologists and commercial interest came the apparent loss of an open information exchange.

Decreased Information Exchange

In a recent series of interviews* with scientists who have worked with interferon since the early 1960s I explored questions concerning the alteration of the nature of information exchange within the field. The scientists uniformly agreed that there was more collegiality and free information exchange in the early 1960s than currently. Equally frequent, however, was the observation that 20 years ago the field was composed of a small group of individuals groping for solutions in a “fringe” area. Another significant factor was that there were more obvious questions of interest then than there were workers, and so the nature of competition was also different. Now there are a few well-defined goals—for example, how to produce clinically usable interferon and how to identify diseases in which interferon is useful.

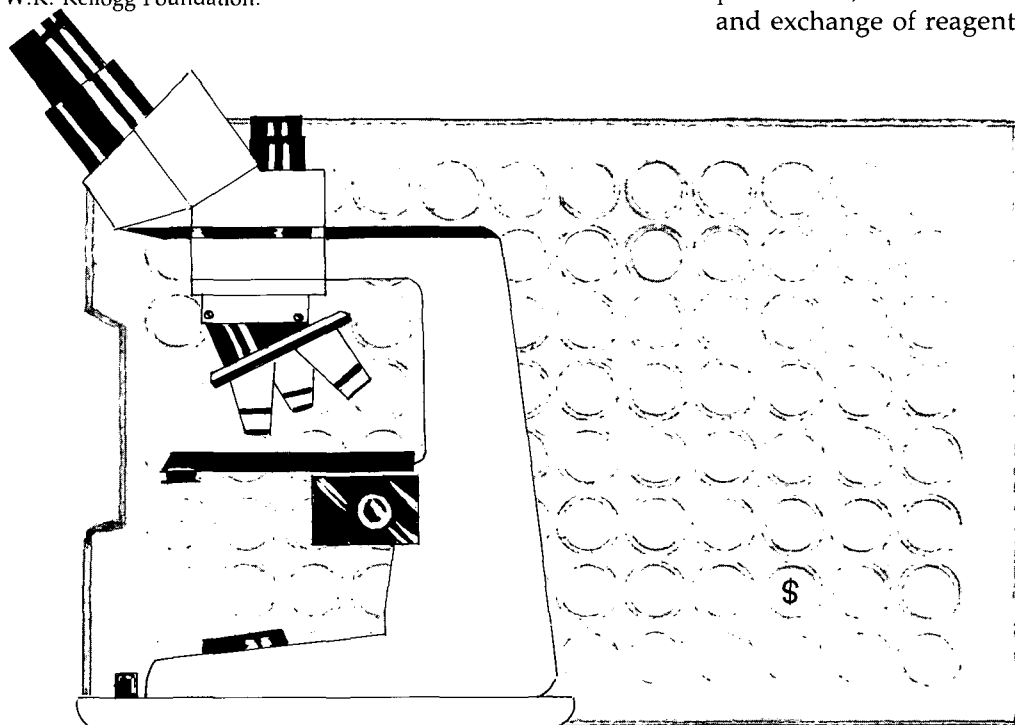
The interferonologists offered two general explanations for the decreased information exchange. One

* Conducted during 1981–82 and supported with a grant from the W.K. Kellogg Foundation.

stems from the technical advances in interferon purification that made it amenable to study in the style of modern biochemistry, which attracted more scientists to the field in the early 1970s. One explanation for a decrease in information exchange is the increased academic competition, independent of commercialization, that was the result of a more crowded field.

The second explanation comes from the intense industrial interest in developing interferon in the late 1970s. One worker noted that in 1980, while on a sabbatical leave at the University of Warwick in England, his request for interferon from Burroughs-Wellcome was turned down. His colleagues at the drug firm who had provided him with interferon for 20 years explained that the company was thinking of doing the same work.

In another case, a French interferonologist was solicited by a British pharmaceutical firm to collaborate on the genetic engineering of a human interferon. Two years after the successful “cloning” of the interferon gene, there has been no presentation of his results because of a secrecy ban imposed by the drug house. The company decided that proprietary protection was more valuable than patent protection. In the meantime, the scientific information content of this work has become commonly known and is no longer of interest. But the fruits of this worker’s labors go unrecorded in the scientific literature, and he is now hesitant to collaborate with industry. He recognizes that the contractual agreement which prevents him from exchanging information reflects in part his own naiveté and predicts that academic scientists in the 1980s will be more sophisticated in negotiating exactly what will be subject to industrial manipulation—when and if to publish, exchange of information prior to publication, freedom to change experimental direction, and exchange of reagents.



Two lawsuits** currently under litigation in San Francisco illustrate the changes in the distribution of research reagents. In 1977 Dr. David Golde, at the University of California at Los Angeles, established a line of cells called KG-1 from a patient's blood cells. Dr. Golde provided the KG-1 cells to Dr. Robert Gallo, at the National Cancer Institute (NCI), whose group observed in passing that KG-1 cells could produce large quantities of alpha-interferon. Neither Golde nor Gallo was primarily interested in interferon.

Isolating the Interferon Gene

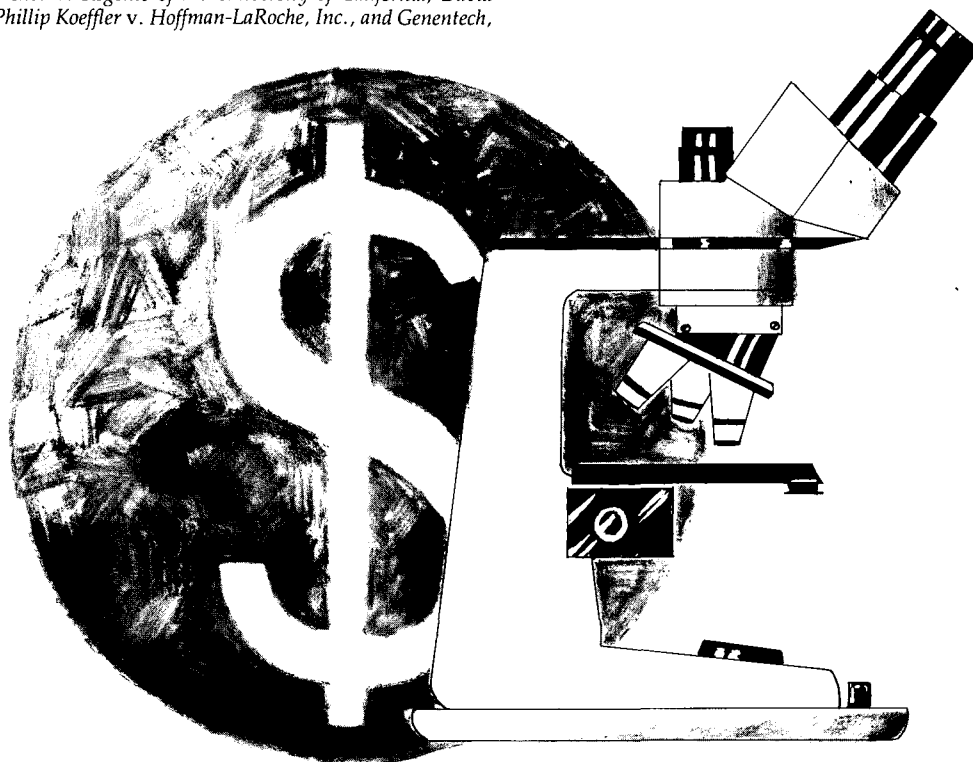
In 1978 production of alpha-interferon by recombinant DNA techniques was still an industrial goal. To reach it, the plan was to isolate the genetic material containing the blueprint for alpha-interferon, then insert it into bacteria, and finally produce interferon in large quantities. The major technical obstacle was isolating the interferon gene, so KG-1 cells which produced a large amount of interferon appeared useful in overcoming this problem. Hoffman-LaRoche and Genentech had entered into an agreement: Genentech would do the genetic engineering, and Hoffman-LaRoche would provide biological and drug development expertise. Dr. Sidney Pestka at Hoffman-LaRoche received from Gallo's lab a sample of the KG-1 cells. It is to a derivative of these cells that Genentech can trace the experimental origins of the interferon produced by Hoffman-LaRoche.

The suits contend on the part of David Golde and the University of California that they should share in future Genentech-Hoffman-LaRoche profits from al-

pha-interferon because KG-1 cells were a necessary resource to clone alpha-interferon. While these suits are watched as a test of ownership rights in the biotechnology area, they are equally interesting concerning exchange of information. Golde says that the cells were given to Gallo with the understanding he would not pass them on and that Pestka "wrongfully induced" Gallo to give him the cells. Gallo says that he received oral permission to pass them on. Whatever the outcome, Gallo, having been caught in the middle, now says, "I won't send anything out of my lab unless its one-hundred percent mine or I have written approval from everyone involved."

Formalizing reagent exchange can at the minimum slow down research, as the following example illustrates. When the race to clone gamma-interferon was won by Genentech in October 1981, the leading challengers, located at the Japanese Cancer Center and New York University, slowed down and—having lost the ability to achieve patent protection and having other experimental priorities—eventually terminated work on the clone. Nevertheless, because both universities are negotiating with commercial firms that wish to "buy" the clone (NYU will use the revenue to support future lab research and training), the researchers are thus prohibited from distributing it to other scientists, even those disclaiming commercial intentions. While circumstances such as these are easy to understand, the traditional routes of free exchange of materials are eroded. Proscriptive stipulations of reagent use can stifle application of the material or lead to costly litigation. Redundancy in research could be another consequence. It may be easier to "rediscover" something than to acquire it from another lab.

** San Francisco Federal District Court, Civil #C803601 AJC, *Hoffman-LaRoche, Inc. v. Regents of the University of California*; *David W. Golde and H. Phillip Koeffler v. Hoffman-LaRoche, Inc., and Genentech, Inc.*



Several of the interferonologists interviewed voiced concern not only about the holding back of information, but also about the dissemination of incorrect information. One example concerns the genetic cloning of gamma interferon. Several academic workers explained that they decided not to attempt to clone gamma-interferon on the basis of false rumors that the gene had already been cloned. This may appear to be trivial and only an example of an old ploy to gain time, but from a commercial point of view time is not trivial, and from an academic scientist's point of view such false information may create significant problems. Delay may preclude soliciting the necessary funds to enter the race, and if the subject has become less fashionable in the interim, the work may not be done.

The tradition of publication differs in academic and commercial sectors. In the early 1970s, Exxon advertised that their scientists' discoveries resulted in several patent applications per day. Perhaps of greater interest would be how many discoveries are never made public, being neither published nor patented.

Other Questions Posed

Additional questions, whose answers may well reflect personal bias and the position of the interferonologist addressing them, were posed: Does the current discussion of secrecy reflect an irrational fear of the academic community during a period in which new forms of industrial-university ties are developing and traditional government and private foundation support is dwindling? Is the trade-off for the individual academic scientist of having to clear information with an industrial sponsor an excessive price to pay for long-term and generous commercial support? Is the trade-off for the individual scientist the same as that for the general scientific community and the consumers of science?

Everyone queried said that secrecy created a less desirable atmosphere in which to work, and all admitted exercising free exchange with certain trusted friends. Some felt that even if secrecy impedes research in academe, it may be better for the general public because it is the indication of commercial investment.

Robert Oldham, director of the National Cancer Institute's Biological Response Modifier Program, which oversees clinical trials of interferon, feels that "whichever way you get results done, the quickest is best. . . . If it no longer works to have government funding, grants, and basic research done in the university, if it works better in a pharmaceutical institute research laboratory, that's better. What we want is the end result—better treatments, better biologicals, better biomedical research." The academic biomedical re-

search community has, for at least the past 25 years, provided the basic science base from which the wanted applications were derived. Whether maintenance of the atmosphere which prevailed on American university campuses in the 1960s and 1970s is critical to preserving such a science base is an experiment only now in progress.

Another view is that of NCI oncologist Dr. Arthur Levine, who recognizes the need for basic studies on interferon. He recently presented a lecture on interferon in the "Medicine and the Layman" series organized by the NCI in Bethesda, Maryland. His fear, that if basic science research is left solely to industry the science base will erode, was confirmed for him by the response to his talk, in which he voiced skepticism about the future use of interferon in cancer therapy. The whole first row of his audience was occupied by venture capitalists. After his talk, several approached him with the comment that he had just saved them a lot of money. Industry is judged by its balance sheet, and not by the number of papers published in the Proceedings of the National Academy of Sciences.

I have attempted to use examples from the interferon experience to illustrate some of the policy issues facing the biomedical research community today: the need for long-term funding in a period of tight money and decreased government support for basic research; potential conflicts of interest between the scientist as entrepreneur and as academic; disclosure of information versus proprietary claims. Commercial support of academic research is a fact of biomedical science in the 1980s. The question is not whether the commercial sector should support work in universities, but whether commercial interest will result in erosion of an independent basic science base and whether noncommercial support of university research is needed to prevent such erosion. It is hard to measure the extent and effect of decreased information exchange because the data are not available for analysis.

"We're in a Transition"

What is available is anecdotal example. "Research opens and closes regularly," prominent biologist and Nobel laureate Walter Gilbert said in a 1980 *Wall Street Journal* interview. "We're in a transition from a field of basic research to one with a hard technological base. During such transitions the distinction between basic and applied research blurs and everyone gets nervous about whether his work has a commercial application." Gilbert appears to have solved his dilemma. When he gave that interview he was a professor at Harvard—as well as a founding member of Biogen, a Swiss-based bioengineering firm. He has since resigned his professorship to head Biogen full time. Biogen was reported to have declined to testify during the June House hearings concerning the issues discussed here on evolving academe-industrial ties. 

Sandra Panem, on leave from the University of Chicago's Department of Pathology, is a science and public policy fellow in the Brookings Economic Studies program.

How to Reduce the Risk of Surprise Attack

As recent events in the Falkland Islands and Lebanon illustrate, military surprise almost always achieves its immediate objectives. From World War II to the present day, all the major conflicts that have reshaped the international balance of power have begun with surprise attacks, and surprise succeeded despite ample intelligence warnings. In his new book *Surprise Attack: Lessons for Defense Planning*, Richard K. Betts calls for strategies and tactics that will reduce dependence on warnings and thus improve deterrence.

In the study, Betts presents a comparative analysis of why surprise attacks since the beginning of World War II have succeeded, then applies the analysis to current Western defense planning and recommends ways of coping with the possibility of sudden attack in the future.

***Surprise Attack: Lessons for Defense Planning*, by Richard K. Betts, senior fellow, Foreign Policy Studies program. September 1982. 318 pages. \$9.95 paper, \$24.95 cloth.**

During World War II, the French, Soviets, and Americans all suffered surprise attacks by the Germans and Japanese. In the postwar period, both the North Korean invasion of South Korea and the Chinese intervention in 1950 were examples of surprise attacks. Three Middle East crises, the Sinai campaign of 1956, the Six Day War in 1967, and the October War in 1973 were all launched by surprise moves. The Soviet invasion of Czechoslovakia in 1968 presented a further instance of a successful surprise attack.

In none of these examples was surprise due primarily to a failure of intelligence. The warning signs were there. Surprise succeeded because political leaders failed to respond to intelligence by authorizing an alert, a mobilization, or deployment of defending forces. Usually they failed to respond for one of three reasons: They refused to believe their own intelligence; they explained away the intelligence reports, believing the enemy was too sensible to risk a war and was merely posturing; or they feared making the crisis worse and provoking the enemy into launching an attack.

Betts' review of the historical case studies also reveals that the military balance of capabilities in peacetime is not the critical issue. Surprise attack immediately changes that balance by neutralizing large portions of the victim's forces.

Betts demonstrates the need for American strategy to include plans to prevent surprise. Because this is so difficult, he says, an even higher priority is to devise ways to reduce its consequences. This takes on added

urgency at a time when the forces of the Soviet bloc and the Western alliance are arrayed against each other at levels and readiness unprecedented in peacetime. Surprise could be a key element in a successful initial attack that in turn could increase the pressure for nuclear escalation in a future conflict. Betts notes that all the major sudden attacks in the twentieth century occurred during times of prolonged tension, when political leaders realized that war was on the horizon but still achieved surprise.

In their planning, he says, political leaders must confront the latent tension between building combat power capable of effective deterrence and encouraging stability in superpower relations. Psychology and motives have consistently been misunderstood, and cultural traits unappreciated, Betts says, and Western planners must build more flexibility into their defensive plans. An equally complex task is to counter an enemy who may act in ways that seem irrational.

The critical problem for American leaders and their allies, Betts says, is that NATO cannot afford a surprise attack. It does not have a cushion of superiority in standing forces that could counteract the effects of Warsaw Pact success in the first week of battle. Therefore NATO needs a military strategy that is credible but does not require major movements that could appear, to some decision makers, to be provocative. One suggestion Betts offers is much more developed



fortifications along the inner German border: They would allow NATO leaders to man the forward line with fewer men and tanks in a crisis, which would be less provocative to the East and also release more forces to form mobile reserves behind the line. The lack of sufficient mobile reserves is currently NATO's principal operational vulnerability.

Equally important, he says, are the "soft" problems of how Western leaders would react to warning intelligence. Enhanced communications and improved intelligence with the use of satellites provide technical assistance, but the relations between allies are always susceptible to political pressures and personal foibles. Betts' analysis is that the Soviets could not achieve complete surprise but also that NATO units in Germany could not achieve complete readiness.

Nuclear surprise is even more difficult to prepare for, given the short warning time and the possibilities for the interruption of satellite communications. Betts says the United States must always be alert to a Soviet technological breakthrough before it becomes operational. The best approaches are arms control and verification agreements that inhibit surprise and the nurturing of political relations that make an attack less likely.

A surprise attack in Europe, Betts says, would be the most dangerous case, but it is the least likely. It is more conceivable in areas where political conditions

are more inviting, chances for successful conventional attack are greater, and nuclear escalation is less likely. American interests are clearly involved in the principal area of danger, the Middle East. And all these cases, from the northern and southern flanks of Europe to surprise at sea, or in Korea, could escalate into a general war between the superpowers.

Betts makes clear that the principal challenge in translating warning into response is to shorten the period of debate within and between allied governments. He calls for innovations within NATO that, while improving the reaction time, take into account the delicate task of injecting political and diplomatic factors into defense planning. The defense posture, in turn, must include a strategy that makes defense possible even if surprise occurs. U.S. programs should sacrifice some incremental additions of combat striking power to emphasis on strategic lift, in-theater mobility, better maintenance for higher readiness, and tactical flexibility. Improved command communications and negotiated agreements are the best steps that can be taken to cope with nuclear surprise.

Betts concludes that "the United States and its allies need stronger deterrence through better defense. They will get more of both if they match the attention given to hardware and manpower with comparable emphasis on military and political innovations that reduce dependence on response to warnings."

Sanctions and a Poland Policy

As the Polish economy begins to recover, Washington should look for an early opportunity to end government sanctions against Poland, as well as the Soviet Union, according to Jerry F. Hough in *The Polish Crisis: American Policy Options*. The sanctions will become both increasingly unproductive and more difficult to remove, and the termination of martial law in Poland might be the appropriate time to end them. Besides eliminating the awkward appearance of economic warfare against Poland, the Reagan administration could gain a psychological advantage by coupling the removal of sanctions with a promise of substantial aid when its maximum demands are met. Then if they are not met, denial of aid could be clearly seen as a response to continued repression.

In this staff paper, Hough, professor of political and policy sciences at Duke University, examines the development of the crisis in Poland, explains the current Polish political and economic situation, and presents options for the U.S. response.

American policy toward Poland cannot be isolated from its policy toward the communist world and particularly the Soviet Union, Hough believes. Events in Poland have sharpened Soviet awareness of the need for economic and price reform at home and the political problems in bringing them about. Soviet lead-

ers ought to draw the conclusion from Polish events that economic difficulties in the West are harmful rather than helpful to them.

There are other measures the United States can take in the present Polish crisis, Hough says. Diplomacy should begin with issues in which there are clearly legitimate U.S. interests, such as relations between the Polish-American community and relatives in Poland. Beyond that, American support for political reform in Poland must be indirect.

***The Polish Crisis: American Policy Options*, by Jerry F. Hough, associated staff member, Foreign Policy Studies program. August 1982. 80 pages. \$4.95 paper.**

American diplomats could point out informally that American bankers are concerned about the effects of worker morale on future economic performance and ability to repay international loans. They could suggest that steps to address these concerns, such as more self-management for workers, would be reassuring. Polish entry into the International Monetary Fund (IMF) would be beneficial. Conditionality on IMF credits would be more acceptable to Poland than direct American efforts to stipulate economic terms. The United States might also work toward a reduction of

conventional military forces in Europe in a way that could reduce the economic burden to Poland of maintaining a large standing army.

Hough's analysis shows that Polish economic problems clearly involve other countries as well. Realistically, Western Europe will have greater influence on Poland than the United States because most of Poland's Western trade is with Europe and most of its loans are from European governments and banks. In addition, the serious Polish debt situation cannot be entirely separated from the similar situations in which many non-oil developing countries find themselves. Unless interest rates decline and the world economy begins to expand, the difficult issues of debt reschedulings, and possible defaults, can only become more disruptive. Failure to pay \$3 billion in interest in 1982 would result in interest of \$500 million on just that \$3 billion in 1983.

U.S. policy toward Poland is only one part of U.S. policy toward the communist world, Hough says. The goals should be to reduce the danger of nuclear war, encourage economic reform, and gradually move toward a depoliticization of foreign economic relations. Poland illustrates once more that the economic model developed by Stalin is a failure, as well as the basic fact that communist regimes do not automatically become Soviet allies. The weakness of the Warsaw Pact as an offensive military alliance is one consequence of this.

In the third world, communist revolutions have not been occurring in major countries. Even in the most backward countries, where they have taken place, the Soviets have not been in a position to support them

economically, as they have made clear to Ethiopia, Angola, and apparently also Nicaragua.

Hough argues that the United States should adopt the position of a Great Power, asserting that the economic cards are in its hands and those of its allies. It would then not panic when a third world country, often one that is economically and politically insignificant, undergoes a radical revolution. By proclaiming the economic well-being of the American people as a major goal, American foreign policy would call for mutually beneficial economic relations.

By so doing, Washington would challenge the Soviet Union in an area where its system has not worked well and at a time when the Soviet people's irritation with its economic performance is growing. The United States could emphasize as one of the by-products of arms control the higher standards of living sought by all, and do so at a time when the Soviet achievement of military equality presents the first real opportunity for a reversal in the trend of Soviet military spending.

Writing before President Leonid Brezhnev's death, Hough in his analysis recognizes that a change in Soviet leadership is imminent, and says that the new leaders need to see a possible path toward a better world. If they believe such a transition is possible, then countries like Poland will have an opportunity to gain greater freedom. The question of whether military spending and direct and indirect subsidies to allies causes too great a sacrifice in economic growth is one that the United States could encourage the Soviets to think about, Hough believes. "Nothing could be more conducive for greater Eastern European independence than a better Soviet recognition of the cost of empire."

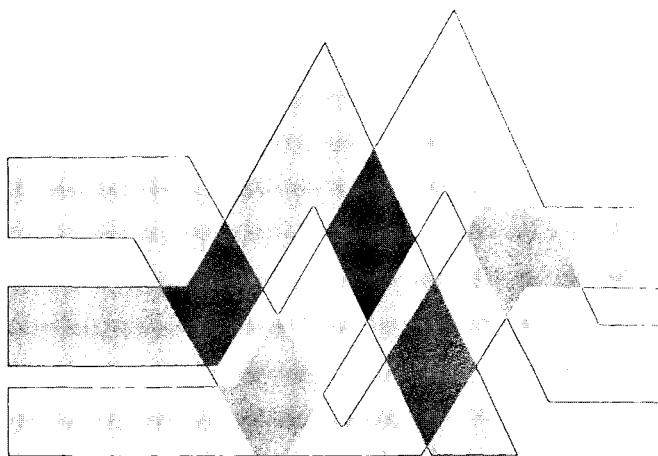
Assessing Social Security Effects

Both the short-run financial problems of social security and whether and how to modify the system in the long run must be addressed in the coming months by the politicians and the people of the United States, says Senior Fellow Henry Aaron. In his study *Economic Effects of Social Security* Aaron maintains that we should not add economic mythology to an already difficult political problem. The inconclusiveness of the evidence that social security has had significant effects on saving and labor supply contrasts with the strong evidence that it has greatly improved the economic status of the aged. Decisions about the future of social security should rest on questions of equity and political acceptability, not on the conflicting and inconclusive economic evidence of social security's supposed effect on saving or labor supply.

Aaron describes three analytical models commonly used to analyze social security. The first posits that people make plans, subject to periodic revision, for the rest of their lives. Another rests on the presumption

that people plan also for their heirs. A third rests on the presumed failure of people to make plans that run even as long as their expected lifetimes.

None of these models yields clear predictions of how social security will change saving or labor supply. What



the models provide is a respectable theoretical argument to support virtually any preconception. Empirical research suggests that no one model explains the behavior of all households. Empirical lists of the models suggest that each describes the behavior of some people but not of the entire population. Prospects of resolving these uncertainties are poor, Aaron maintains, because the necessary data are lacking or flawed.

***Economic Effects of Social Security*, by Henry J. Aaron, senior fellow, Economic Studies program. November 1982. 84 pages. \$5.95 paper, \$12.95 cloth.**

Historical trends indicate that saving has remained steady since World War II, while per capita income, social security, and other retirement income have grown rapidly. Labor force participation by men has remained constant, except for a decline by men over age 65 that has been going on throughout the twentieth century and a drop among 55-to-64-year-olds that has begun in the last decade. Labor force participation by women has tended to rise, except for women over 65, whose work effort has not changed.

In 1974 Martin Feldstein's research led him to insist that social security reduced saving. Aaron asserts that Feldstein's study has been disproved both by an error in the program he used and by more recent studies that have reached contrary results. Research has reached no reliable conclusions about how social security affects saving.

The evidence then does not support the position that reductions in social security benefits would be effective in increasing private saving. Efforts to boost capital formation should rest on one or more of the numerous alternative instruments available to increase national saving.

The empirical evidence suggests that social security has had some effect on labor supply among older workers. But rising incomes and private pensions have been working in the same direction. As a result, it has not been possible to discover whether any significant

proportion of the drop in labor force participation by older workers is attributable to social security. Aaron questions whether the case has been made that older workers should be required to work more. But if such a case is established, he argues, changes in pension rules, tax laws, and other policies should be considered along with changes in social security.

Aaron disputes the prevailing view that the aged as a group are economically disadvantaged and reports on a number of studies showing that the aged are about as well off financially today as the nonaged. The proportion of the aged with money incomes below the poverty threshold is only negligibly higher than it is for the entire population, and the gap has narrowed from 1959 to 1981. Not surprisingly, social security is the largest single source of income for the elderly, providing 39 percent of the total money income of the elderly in 1978, but 76 percent of the income of the elderly poor.

Aaron concludes that, while the social security system affects people throughout their lives, its effects on saving and labor supply are unclear. Economic analysis, then, can provide relatively little good evidence to policy makers considering changes in the social security system. They must turn to other evidence, including the experience of other industrial countries.

Policy decisions could also consider equity issues, such as the need to examine the disparity in benefits paid to one- and two-earner families, an anachronism that Aaron believes should be ended by narrowing the gap in benefits paid to these two groups. These and other fundamental changes must rest on political, not economic considerations. Aaron thinks the responsibility for deciding whether benefits for new retirees should be increased faster than prices should be left to successive Congresses, rather than continuing to be incorporated into an automatic cost-of-living formula. But he thinks neither this decision nor any other should be based on the supposed economic effects of the current system or on a fear that the United States cannot afford the social security system it already has.

The Baby Boom: Another View

Many of the economy's troubles in the 1970s, such as high unemployment, soaring housing prices, and a low saving rate, have been laid at the door of the baby boom generation—the postwar generation born between 1946 and 1964.

Louise B. Russell comes to a different conclusion in her new study: The baby boom generation has not been the major driving force behind the economy, she says; in the growing, changing postwar economy, other social and economic forces have been more influential. Even when the generation has been important—for unemployment, for example—it has not been dominant. In other areas, such as saving, it appears to have

had little or no effect. The economy's problems are primarily due to other causes.

Russell's *The Baby Boom Generation and the Economy* evaluates the impact of the generation on the educational system, the labor market, housing and consumer durables, and its likely effects in its retirement years on medical care and the social security system. Some of her most important findings are presented here.

Unemployment. Because teenagers and young people have higher rates of unemployment than older adults, the entry of the baby boom generation into the labor force caused the overall rate of unemployment to rise significantly. By the mid-1970s it was at least

half a percentage point higher than it would have been otherwise, and perhaps as much as a full percentage point higher. This is an important increase, but it was not the largest part of the unemployment story in the 1970s, when unemployment exceeded the 4 percent target set in the 1960s by 2, 3, and even 4 percentage points. The overall unemployment rate has risen still further in the 1980s, just as the effect of the baby boom generation has begun to decline with its advancing maturity.

The study also considers the argument that the unemployment rates of young people, which were higher during the 1970s than during the 1950s or 1960s, were pushed up by the overwhelming numbers of new entrants. The evidence for this argument is shown to be too weak to justify the higher estimates of the baby boom's effect on overall unemployment that have been based on it.

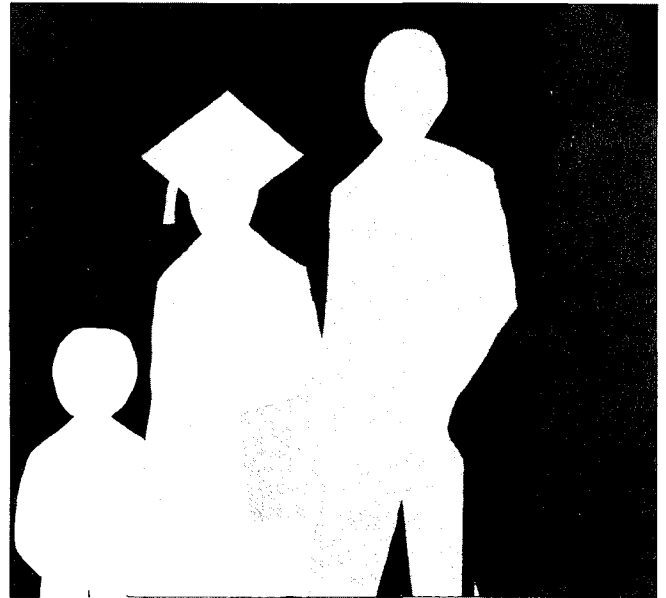
***The Baby Boom Generation and the Economy*, by Louise B. Russell, senior fellow, Economic Studies program. October 1982. 183 pages. \$7.95 paper, \$19.95 cloth.**

Russell concludes that the National Commission on Employment and Unemployment Statistics was right to reject the suggestion that the reported unemployment rate should be adjusted for changes in the age and sex composition of the labor force. Such an adjustment would disguise the true state of the labor market and would encourage the incorrect impression that changes in labor force composition are the most important factor behind the unemployment rate. Instead, the target rate of unemployment should be regularly reassessed. Reassessing the target requires consideration of the whole range of factors involved in unemployment and focuses the debate on causes and policy responses.

Housing and Consumer Durables. Housing construction hit record levels during the 1970s, just as the first members of the baby boom generation reached adulthood, and house prices soared. But careful analysis shows that the baby boom was only one of several factors tending in the same direction and did not dominate the outcome. The other main factors were the rapidly growing population of old people and the strong trend in all age groups toward more and smaller households. Even when the shift toward more households is included, the baby boom generation explained only about one-third of housing starts, and one-quarter of housing starts plus mobile homes, in the early 1970s. In the second half of the decade, the percentages rose to 41 and 36 percent, respectively.

Projections show that, if other conditions permit, the baby boom generation will be a larger factor in the demand for housing in the 1980s. But other conditions are likely to be very important and, as the recent severe slump in the housing market indicates, could offset the effects of the baby boom. During the 1970s eco-

nomie conditions favored separate households and home ownership. In spite of high house prices and mortgage interest rates, the combination of inflation and the favorable tax treatment of home owners made home ownership an attractive investment. As inflation slows and interest rates remain high, the true costs of owning a house have risen sharply. Here, as in other areas of the economy, the baby boom generation will be only one—and not the most important—factor determining the outcome.



Social Security. Social security taxes to support the retirement program must rise rapidly as the baby boom generation retires if the generation is to receive the benefits promised by current law. In the debate over whether such high taxes are desirable, or bearable, some have claimed that today's young workers will lose money on the system, that they will never receive as much in benefits as they must pay in taxes.

Russell finds that this is not true. Her study shows that each generation can expect to receive a positive real rate of return from the system—that is, the benefits they receive will not only keep pace with inflation but will do better than that. She notes that rates of return may not continue to be positive for generations entering the labor force after the year 2000, but that “the possibility of negative rates of return for entire cohorts is in any event not an immediate problem under the current system.”

Comparison With Other Generations. In recent years the baby boom generation has become known as unlucky—always too crowded in schools, in the job market, in housing, and, as a result, never getting the breaks it expected or deserved. Russell examines the generation's experience to date and concludes that its reputation is undeserved. Indeed, in most respects it has fared better than any previous generation, including the “lucky” small one born during the 1920s and early 1930s. More has been spent, per student, on its

schooling, it has earned higher real incomes, and it has been able to buy comparatively more housing.

There have been rough spots—the higher unemployment rates in particular. Established relationships have failed to hold for this generation, and it has had

to adjust to the end of the steady rise in educational expenditures, in earnings, and in many other aspects of life, that had come to be accepted as an economic birthright. Nonetheless, on balance, the baby boom has done better than any previous generation.

America, ASEAN, and the Japanese Challenge

The five countries of the Association of Southeast Asian Nations (ASEAN)—Indonesia, Malaysia, the Philippines, Singapore, and Thailand—are more important to the United States than is generally realized, says Lawrence B. Krause. They now constitute America's fourth largest trading partner, and it is time for American policy makers to take them properly into account. In *U.S. Economic Policy Toward the Association of Southeast Asian Nations: Meeting the Japanese Challenge*, Krause urges the adoption of new approaches that would both give more consideration to ASEAN and allow a better relationship between the U.S. government and American business operating abroad.

The progress and problems of the advanced developing countries will dominate the world economic scene for the rest of this century, Krause says, and a successful policy for handling economic relations with them will help sustain the U.S. role in the world economy. Southeast Asia could be the testing ground for such a policy.

The ASEAN countries are dynamic, rapidly changing countries, Krause notes. Economic gains have been substantial in the past 15 years, dramatic changes have

occurred in their political, social, and cultural life, and they "have been experiencing what can be described as a peaceful and orderly revolution." The five countries have also embarked on a course aimed at economic integration.

This combination of circumstances presents a challenge to outside countries, Krause says, "to understand, encourage, and benefit from what is happening." The United States, which has more to gain from and more to offer the ASEAN countries, has fallen behind Japan in its dealings with them. For many years Japan has given special attention to its bilateral relations with each of the five countries and has taken ASEAN as an institution very seriously since its formation in 1967. Six Japanese prime ministers have visited the ASEAN countries, and Japanese business has been increasingly active in trade and investment in the area. Today Japan is ASEAN's most important trading partner.

To meet Japanese competition in the area, Krause proposes the establishment of a new relationship between the U.S. government and American business. Several elements of existing U.S. policy hamper American firms in the competitive struggle, he says, and should be changed. Among the "disincentives to trade" are the 1977 Foreign Corrupt Practices Act, the human rights amendments passed in 1977–78, taxation of Americans working abroad, and the extraterritorial application of some U.S. antitrust laws.

***U.S. Economic Policy Toward the Association of Southeast Asian Nations: Meeting the Japanese Challenge*, by Lawrence B. Krause, senior fellow, Economic Studies program. September 1982. 98 pages. \$5.95 paper, \$14.95 cloth.**

Krause links his analysis of American economic activities in Southeast Asia with his assessment that the United States is no longer in an economically preeminent position and should change its global economic policy based on the older industrial countries to one that pays adequate attention to the world's growth leaders, the developing countries.

The shortcomings of policy are most important in the ASEAN area, where Japan is the dominant economic partner for some of the fastest growing countries in the world. "U.S. ability to compete there," Krause



writes, "has implications for meeting the Japanese challenge throughout the world."

The United States also has strategic, political, and ideologic interests in the ASEAN countries, where four great powers, the United States, the Soviet Union, China, and Japan, meet and contend. The ASEAN countries sit astride some of the world's busiest shipping lanes, and restricted access would have serious economic and strategic implications. The United States benefits from peace and prosperity in the region and should support ASEAN to maintain these goals.

While acknowledging that "there is much that is

positive in U.S. policy toward ASEAN," Krause urges the adoption of new policies that give more consideration to ASEAN as an institution and to the desires and goals that member countries have set for themselves. Among these would be the creation of an ASEAN section within the Foreign Commercial Service, designation of a deputy assistant secretary of state for ASEAN affairs, funding of Asian Development Bank lending programs that support ASEAN's integrative projects, and consideration of a new institutional framework for relations among all the countries of the Pacific Basin.

Workers, Jobs, and Inflation

Why has unemployment been so high in the past ten years? How much responsibility does the labor market have for the acceleration of inflation that took place in the 1970s? And how much unemployment will be the side effect of wringing inflation out of the economy? These and other related questions were addressed at a 1980 Brookings conference whose proceedings are presented in *Workers, Jobs, and Inflation*.

Martin Baily, the editor of the conference volume, writes in the introduction that during the 1970s the labor market was neither a major source of inflationary surges nor a powerful brake on inflation. The main effect of the labor market on inflation is that once an inflationary surge is transmitted to wages, it is difficult to remove without a high level of unemployment.

Among the factors that worsened unemployment in the 1970s are union rules and minimum wages that restrict access to jobs, an increased proportion of young people in the labor force, and the availability of alternative income sources, including government transfers and the illegal or underground economy. The result has been an increase in structural unemployment. Baily emphasizes, however, that draconian measures to force people to work would not be appropriate even if they reduced unemployment. It is his contention that a combination of strict control over aggregate demand and either a flexible incomes policy or measures to make the labor market more responsive to unemployment could be made to work.

Robert Gordon's detailed analysis of inflation provided the basis for Baily's view of the role of the labor market in the inflation of the 1970s. Gordon then goes on to predict the likely consequence for unemployment and inflation of the kind of restrictive monetary policies that have been seen since the conference was held in November 1980. His predictions are sharply criticized by discussant Herschel Grossman, a supporter of the rational expectations school. Grossman argues that a consistent, firm anti-inflationary program might be more effective at less cost than Gordon predicted. Events since 1980 have generally supported Gordon's

predictions. Inflation has fallen, but at the cost in high unemployment that Gordon foresaw.

Lawrence Summers and Kim Clark present evidence suggesting that the unemployment insurance system adds about 0.65 of a percentage point to the unemployment rate on average. Martin Feldstein contends there are biases in some of the estimates and that the impact on unemployment is larger. He has previously suggested that unemployment insurance adds 1.25 percentage points to unemployment.

***Workers, Jobs, and Inflation*, edited by Martin Neil Baily, senior fellow, Economic Studies program. September 1982. 358 pages. \$12.95 paper, \$31.95 cloth.**

In other papers, James Medoff and Katharine Abraham argue that worsening unemployment in recent years has resulted in part from a shift in the relation between unemployment and vacancies. Wages begin to accelerate when firms cannot fill jobs from among the unemployed because of a lack of skilled people. John Geweke uses some powerful econometric techniques to look at the relations among labor market variables, inflation, and money. Daniel Mitchell and Larry Kimbell explore the importance of wage contracts in determining labor market outcomes.

Pierre Fortin and Keith Newton from Canada compare the U.S. and Canadian experiences and try to understand why inflation and unemployment have been higher in Canada. Nicholas Kiefer and George Neumann examine the influence of wages on the decisions of workers to accept jobs. In earlier work, Martin Baily and James Tobin had suggested that a wage subsidy for hard-to-employ workers might reduce their unemployment. The Kiefer and Neumann model provides some support for this idea, suggesting that a wage subsidy could result in employment gains for this group. However, they find that employment gains would translate into only a small reduction in unemployment, because the subsidy would also encourage labor force participation. **B**

Brookings Today

In an economy suffering from lingering recession, declining rates of productivity, uncertain credit markets, concerns about export competitiveness, and lengthening unemployment rolls, there is one area of business providing a sharp and pleasant contrast—the combination of hardware and service enterprises generally known as high technology. Of particular significance for the future is the telecommunications sector, which offers a complex array of technological revolution, regulatory reform, industry realignment, new customer usage requirements, and explosive growth.

To discuss these and related questions, such as the effects of the technological transformation, nationally and internationally, the implications of recent deregulation and antitrust decisions, and public policies geared to the future development of communications systems, the Advanced Study Program

held a day-long seminar on October 6 on the telecommunications industry. Some 80 people from the government, business, legal, and scientific communities gathered at Brookings' Advanced Study Center to meet with speakers Senator Bob Packwood, Congressman Timothy E. Wirth, Lawrence White of the Justice Department, J. S. Mayo of Bell Laboratories, Robert Hall of Satellite Business Systems, consultant Robert La Blanc, Bernard J. Wunder of the Department of Commerce, and John F. Dealy, counsel, Shaw, Pittman, Potts, and Trowbridge.

Here Dealy, a Brookings executive fellow and distinguished professor of Georgetown University's School of Business Administration, reviews some of the topics discussed at the seminar and offers some personal views on policy issues and options for the future.

Telecommunications: Policy Issues and Options for the 1980s

John F. Dealy

AS A SPEAKER AND PARTICIPANT in the telecommunications seminar and a recent executive in the satellite communications industry, I am struck by the wide range of issues and options confronting the industry in the 1980s.

The world of telecommunications, already an \$80 billion business in the United States, can be considered in one sense to be still in its infancy, as an industry newly opened to competition by the Federal Communications Commission (FCC) and the American Telephone and Telegraph Company (AT&T) antitrust settlement. The resulting competitive industry structure, coupled with recent technological breakthroughs, other regulatory reforms, and changing demands of users, signals the start of a remarkable era for an otherwise mature industry.

Each week, new and old companies bombard the individual and corporate customer with a bewildering variety of telecommunications product and service offerings, from "intelligent" telephones to two-way home computers, from integrated services digital networks for the individual office to nationwide electronic mail and video conferencing for the major corporation. Behind these offerings is an extraordinary collection of technological improvements, most of which have reached the marketplace in practical form only during the past decade:

- Silicon chips that hold hundreds of thousands (soon millions) of components. This is the core technology driving most communications-computer hardware advancements.
- Inexpensive, reliable solid-state control systems utilizing the chips. These are the "smart" micropro-

cessors and microcomputers that manage and switch the elements of modern telecommunications systems.

- Digitization—the conversion of all types of communications (voice, video, and data) into digital "bit-streams." Digitization provides a flexible, universal means of transporting information.

- Hardware capable of using the frequency spectrum more efficiently and communicating effectively at extremely high frequencies. These transmitters, receivers, and associated equipment have dramatically increased the "throughput" in congested portions of the spectrum while opening relatively unused segments to volume communications.

- The synchronous orbit satellite. Its success as a commercial venture for domestic U.S. communications radically changed the perception of what it takes to create a long-distance network and allows corporate users to operate their own nationwide intracompany communications systems.

- A wide range of telecommunications end-products—such as high-speed facsimile, word processors, and advanced display terminals, to name just a few.

Concurrent with these technological breakthroughs was an equally fundamental revision in the regulatory/legislative umbrella covering the industry. In the late 1960s and early 1970s, the FCC and the courts authorized entities separate from the Bell System and independent phone companies to sell telephone equipment directly to users, to start competing private-line and, ultimately, switched-message telecommunications systems, and to create a satellite-based telecommunications sector open to any entrant meeting minimum technical and financial qualifications.

These forces of competition—once unleashed upon a previously oligopolistic, if not monopolistic, industry—teased the customer's palate with innovative and less expensive services. At the same time, the gradually merging technical lines between communications and computers eroded the viability of the traditional regulatory separation of these industries memorialized in antitrust consent decrees and enforced by the FCC.

The Landscape Is Clearer

Through the 1970s, the new competitive forces battled the incumbents and each other in the marketplace, before the FCC, in the courts, and ultimately in the halls of Congress. Today, the telecommunications landscape, while considerably more complex than in the late 1960s, is at least much clearer than throughout most of the 1970s. The new carriers and their competitive services are firmly established. AT&T recently entered into a negotiated settlement of its antitrust litigation with the government, cutting loose its local telephone company affiliates, preserving its position in long-distance telecommunications, retaining its manufacturing and research arms (Western Electric and the Bell Laboratories), and freeing itself to enter the marketplace for computer-based hardware and software products. The FCC, under prodding from the industry and seeking to meet the expectations of users stimulated by recently available technology, opened up the frequency spectrum to reexamination and reallocation, creating new business sectors in cellular radio, digital termination systems, low-power television, and other areas.

On the international scene, the situation is not nearly as well defined. The Intelsat system remains a major force in international communications. Yet there is increasing pressure from various countries to establish regional satellite networks. In the frequency spectrum area, the traditional governing bodies within the International Telecommunications Union are proving less and less capable of dealing with national pressures and rapidly changing demands for revised allocations, both with regard to frequencies and to orbital slots for satellites.

While there is an incipient movement in some countries to introduce competition in the provision of telecommunications, most markets outside the United States remain relatively controlled when it comes to entry and service offerings. On the other hand, foreign telecommunications manufacturers view the U.S. deregulation trend as a major business opportunity and are flooding the United States with their products and services. The American response has been sporadic and largely ineffective to date.

Against this domestic and international background, the telecommunications industry faces major challenges in the 1980s as it strives to realize its full potential for business and society.

Technologically, two breakthroughs would stimulate even more rapid growth than has been experienced to date: the ability to "access" computers with plain English commands and questions; and the ability to accept voice inputs and convert them electronically into printed copy. The organizations perfecting workable solutions in these two areas will not only create exciting businesses but also may stimulate far-reaching innovations in the conduct of business by users of the new technology.

Legislation and regulation in the 1980s must be geared to the changing needs of the industry and not tied to the principles of the past. A prime area of entrepreneur and regulator interaction will be the frequency spectrum. New frequency allocations authorizing service offerings as diverse as cellular radio, digital electronic message services, direct broadcast satellites, low-power TV, and microwave distribution systems (MDS) for video are already approved or in the process of approval. Each has significant market/profitability implications for existing comparable service providers. For example, cellular radio could ultimately displace basic home telephone usage and MDS could have an impact on the economics of cable TV. Industry members must be sensitive to the possibilities of further reallocations in the spectrum and their effect on investment decisions being made today.

Advantages Could Be Reversed

Utilization of the frequency spectrum, while more flexible in the future, will remain subject to technical, cost, and interference limitations. At the Brookings seminar, Dr. J. S. Mayo commented on the potential for large-scale application of fiber optics as a very efficient broadband transmission medium. "Rewiring" America with fiber optics cables, while a massive capital project, would create an alternate transmission system of considerable flexibility and enormous capacity. If vigorously implemented by AT&T and the nation's local telephone companies, fiber optics technology could reverse the economic and technical advantages currently enjoyed by satellite and microwave transmission carriers.

The Federal Communications Commission and state regulatory bodies face significant challenges of their own in the 1980s, such as how to oversee an industry of competing forces in equipment supply, long-haul transmission, and some types of local distribution while a large segment of that industry (the former Bell Operating Companies and the independent phone companies) retains elements of its monopoly-in-fact status. Traditional rate regulation appears inadequate to the task. At the same time, the future of the FCC itself is clouded as Congress periodically tries to formulate a new telecommunications statute amid an escalating trend toward deregulation.

State regulatory bodies must operate in a more

complex environment than before. Regulatory activity at state and federal levels will probably be characterized by practical compromise throughout a decade that will bring less rate regulation, in recognition of the impact of market forces, but still strong technical control, along with an effort to retain system integrity in a world of exploding products and services.

The ten-year drama of regulatory transformation of the 1970s has yet to be acted out on the international stage, but should be in the 1980s and 1990s. Both the legislative and executive branches must appreciate better the risks, cultural differences among parties, and urgency of developing a cohesive American approach to prevent a collapse of the current world regulatory system and to help the U.S. telecommunications industry retain its competitive edge. We cannot merely react to mounting pressures from, or the investment strategies of, certain countries to penetrate our expanding hardware and service markets.

Recognize the World Situation

Our leaders must adopt a pro-active, anticipatory program, recognizing that the world situation is not a mirror image of the American experience, but a fundamentally different environment of incremental negotiating advantage, protectionism for growing industries at home, and aggressive pursuit of export markets abroad. Failure to appreciate this difference and to maximize U.S. domestic telecommunications industry strength and its concomitant export competitiveness capability will constitute a lost opportunity of considerable magnitude—for jobs, improved domestic business sophistication, and strengthened world influence through leadership in this cutting-edge industry of the information age.

For the telecommunications industry to reach its full potential domestically, enormous capital sums to fund the growth must also be available. Transmission systems are particularly capital intensive. Moreover, full exploitation of the digital world requires reequipping of existing plant and installation of new plant and customer equipment in considerable volume. A long-term debt market with reasonable rates, tax policies favoring capital investments and modernization of facilities, export supports specifically tailored to the needs of this industry—all are critical ingredients in sustaining a strong domestic industry capable of thriving in world competition.

Our national government's recent posture toward industrial development has grouped useful tax incentives, support of certain troubled industries, some legislation to ease the difficulties of American exporters, and tentative moves to improve access of U.S. goods into certain foreign countries. I would like to see a more entrepreneurial, opportunity-sensitive posture. Federal government investments in telecommunications industry growth and its export competitive-

ness will pay extraordinary dividends in jobs, the balance of payments, and an improved domestic tax base. Unless this case is viewed as an investment opportunity with high payoff, America's reaction will be unplanned thrusts against specific countries that close their markets to U.S. products or have already achieved a large U.S. market share with subsidized products and services.

Among the major uncertainties of this decade is how existing and potential telecommunications technologies, revamped industry structure, and adaptive regulation and legislation will affect the home, the office, and society at large.

Millions of homes will shortly be equipped with computers capable of broadband, two-way communication. Work, leisure, and learning with the home computer will require an active approach on the part of the consumer, in sharp contrast to the relatively passive "reception" of radio, TV, and one-way cable offerings. Everyone will have to learn new individual skills to operate effectively with the computer, and the pursuit of information, if not knowledge, may enjoy a resurgence as a "pastime" for the many.

At the office, integrated services digital networks supplying voice, copy, video, data, and electronic mail through a single system will be the norm of tomorrow. The role of the communications manager in a sophisticated business organization will change substantially, requiring new skills of technical integration and operations analysis. The challenge to the general manager or chief executive of a firm will be how to use this technology to streamline decision-making and achieve fundamental reductions in the overhead and administrative costs of American business. So far, America's managers have learned to move, process, and display information faster and better. The next step is to change the way managers use communications and information-processing to produce goods and deliver services.

A Reexamination Required

For the consumer and the manager to exploit the potential of modern telecommunications fully, America's citizenry must be at least "computer-literate," that is, able to use and control this technology. This requires a reexamination of educational curricula from elementary school through the university. For U.S. industry to retain competitive leadership in telecommunications on the world scene, the United States must produce vastly more engineers and technicians than it does currently; our near-term shortfall of engineers alone for high-technology industries is estimated at 50,000 a year.

Telecommunications and other high-technology sectors offer the realistic opportunity to generate numbers of new technical and manufacturing jobs for American workers. At the same time, our core manufacturing industries are experiencing job cutbacks. This situation



Telecommunications participants Hall, Dealy, and La Blanc: the start of a remarkable era.

demands a serious national program of job retraining to minimize the adverse effects of wide disparities between job opportunities and available skills.

It is encouraging to note that many states—sensitive to medium-term tax-base problems and cognizant of employment opportunities in high technology—have initiated aggressive educational and retraining programs as an investment in their futures. Similar concern and action are required at the national level, particularly in view of the selective investment practices of foreign countries and their targeting of the U.S. telecommunications market for volume penetration.

One potential threat to the growth and practical impact of telecommunications in the eighties is a side effect of the new competition, deregulation, and technological advancements themselves. That is the breakdown of the old system of technical standards set and maintained domestically by the Bell System. Moreover, the marriage of computers and communications in modern integrated networks, using transmission links as diverse as synchronous satellites and fiber optics, compounds the standards problem with issues of computer protocol compatibility across the end-to-end system. A complex political and technical challenge during the next decade will be to evolve a domestic, and international, set of technical transmission standards and interface protocols that manufacturers and common carriers will honor.

Viewing telecommunications from the broader perspective of American institutions and societal needs, congressional representatives at the Brookings seminar raised two other issues for the 1980s.

Senator Bob Packwood, chairman of the Committee on Commerce, Science, and Transportation, discussed First Amendment rights and the electronic media, advocating that the electronic media be accorded the same broad constitutional protection as the print media. He pointed out that the traditional reasons for a different treatment—scarcity of the frequency spectrum and potential or actual dominance by a few voices—have largely been eliminated by modern technology and structural changes in the makeup of the industry. In my view, however, there remains an essential difference between electronic and print media today. The electronic listener or viewer is passive and the effect of the message delivered is often very dramatic; in the print media, on the other hand, the reader is

active and the message less dramatic—the reader searches out the information, ignoring what he or she finds uninteresting or imbalanced. Perhaps when two-way video communication is commonplace and the viewer “shops” for news as he or she does in the print media, regulatory rules like the fairness doctrine and equal access will no longer be desirable to achieve diversity of view and openness in public discussions.

Congressman Timothy Wirth, chairman of the Subcommittee on Telecommunications, Consumer Protection, and Finance of the House Energy and Commerce Committee, raised an issue of “public interest” in this era of deregulation and competition driven by market forces. Should residential and rural consumers be subsidized in their basic telephone service? If so, by whom—the long-distance caller or the general population through the tax base?

I concur in the view that universal telephone service at a reasonable price should remain a national objective. It would be a serious setback to a knowledgeable, functioning democratic society if modern telecommunications deregulation and competition resulted in contracting the availability of phone service to the poorer segments of that society. At the same time, I believe Congress and the FCC should face the issue directly. If the long-distance companies and their customers are to bear the burden, this should be specifically legislated and made a condition of license grants.

Whether one is a student of business, a fan of technology, an observer of national and international politics, or a citizen concerned with America’s economic future and competitive position in a changing world, telecommunications offers a stimulating and complex field of inquiry. Its potential is enormous, its technical, regulatory, and social accomplishments already impressive. The problems and challenges noted here should motivate industry and government leaders to work to anticipate change, not merely to react to it. Investments in education and international trade negotiation, actions to create a financial and tax environment conducive to maximum development and market penetration, creative attention to the issue of using the technology to conduct business more efficiently—all will pay extraordinary dividends in tomorrow’s world of heightened international economic competition, accelerating technological change, and evolution of America toward an information-based society.

Board of Trustees Fall Meeting

Brookings Today

The Brookings Institution Board of Trustees held its fall meeting on November 4-5 in Washington, D.C. The trustees meet three times a year, twice in Washington, and once in a retreat session outside the city. Following the first day's business session, the trustees recessed for cocktails and dinner with members of the institution's staff, spouses, and guests. The speaker after dinner was Albert Hunt, national political correspondent for *The Wall Street Journal*, who analyzed the 1982 mid-term elections. To the right and below are scenes from the evening's activities.



Trustees Thomas Donahue, secretary-treasurer of the AFL-CIO, and Howard P. Swearer, president of Brown University.



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